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ABSTRACT

Major themes in the literature related to organizational communication and higher education are examined, with emphasis on the internal aspects of organizational communication in higher education. Attention is directed to the systems model and the structure, function, process, and communication patterns of higher education systems. The literature about three information problems is examined: uncertainty, timeliness and distortion, and overload. From this review, an information agenda is developed to help higher education administrators plan communication more effectively. Selected elements of organizational climate that have a particular impact on organizational communication and that have been the subject of previous investigations on educational settings are also addressed: administrative support, aggressive and innovative faculty formal networks involving consultants or resources, and the establishment of appropriate communication links within the organization. Gathering data for effective decision making is often characterized by an information overload related to the uncertainty of the task. Although computer information support has been helpful, decision-making processes of many college and university groups are characterized by weak information bases, a wide range of communication links, and very flexible boundaries. Discrepancies in power attributed to various positions and role ambiguity of key administrators compound these problems. Communication problems related to the faculty committee system are considered, and views on applying participative management and management-by-objective in higher education are presented. A bibliography is appended. (SW)

Report 10 1981

Organizational Communication and Higher Education

Robert D. Gratz and Philip J. Salem

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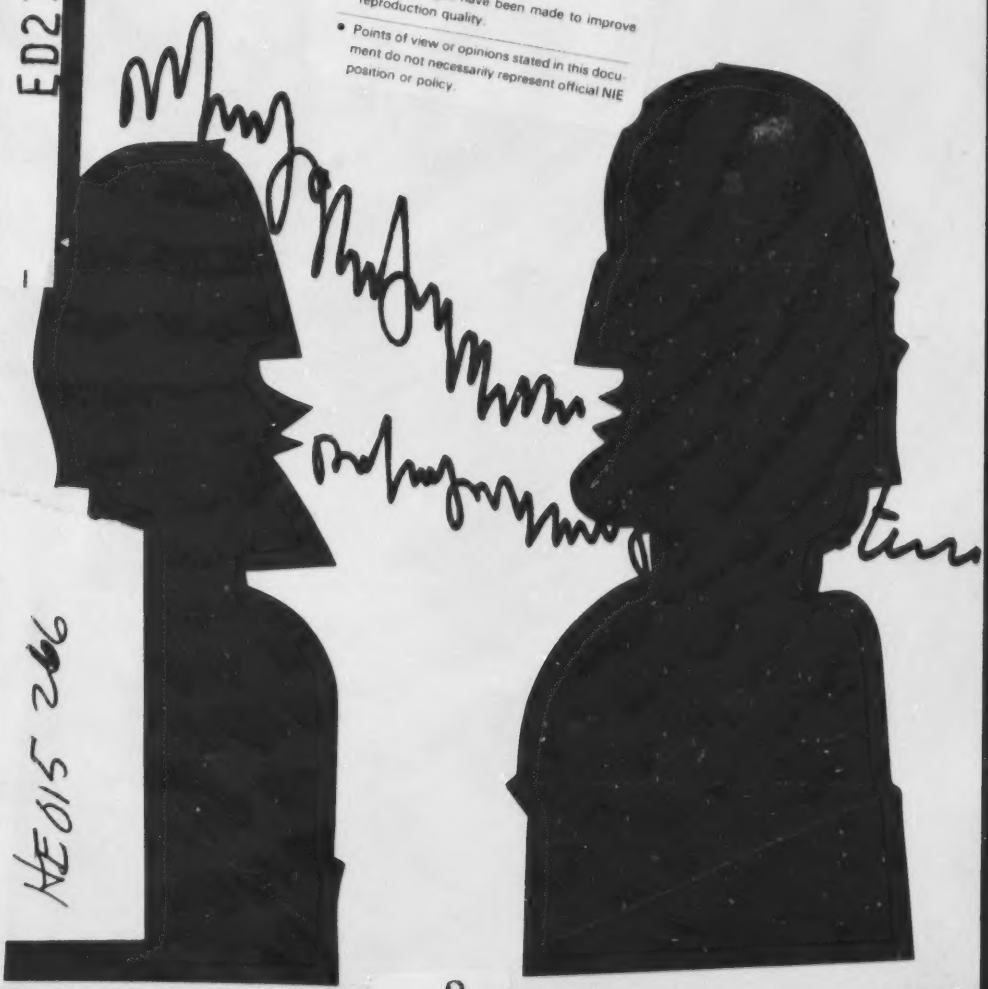

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Robert D. Gratz and Philip J. Salem

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Foreword

Adequate communication is necessary in any organization, simple or complex, in order to achieve coordination and understanding among the participants. Just as poor communication within a family causes conflict, so it does in complex bureaucracies, where the communication process is structured by chains of command and written guidelines. For most higher education institutions, the communication process lacks both the intimacy of a family and the formalized structure of a highly regimented organization. Therefore, it is necessary for academic institutions to become more aware of the communication process in order to maintain or improve their basic effectiveness and efficiency.

Colleges and universities can be characterized as information-processing systems. Because of the independent and self-directed nature of faculty and academic departments, decisions are more often than not based on informal consensus. If this consensus is based on erroneous information, effective decision making is hampered. Communication difficulties occur in three major areas: the flow of information—getting information to the right people at the right time; information quality—developing accurate information and putting it in a form to which people will pay attention; and the communication process itself—understanding how the communication process currently functions and how it influences the operation of the institution. Procedures and policies that can help improve an institution's communication capabilities will necessarily lead to improvements in management and decision making.

In this Research Report, Robert D. Gratz, associate vice president for academic affairs, and Philip J. Salem, associate professor of speech communication, of Southwest Texas State University, provide an analysis of information use within colleges and universities. They describe the scope and magnitude of information-related programs in higher education and suggest solutions to communication problems in the form of an information agenda for administrators.

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Robert D. Gratz
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Overview

This research report examines major themes in the literature related to organizational communication and higher education. Academic institutions are social systems whose primary function is information processing, and, as such, they are prone to problems common among social systems. Academic institutions have often devoted great energy to communication with external publics, but their focus on internal communication problems usually has had a lower priority. Several previous studies have examined external communication from an institution with emphasis on the public relations aspects. This report concentrates on the internal aspects of organizational communication in higher education.

Three important communication issues face every administrator in higher education:

- *Information flow.* Getting the information, disseminating it to the people who need it, restricting the flow to people who do not need it, and improving the efficiency and quality of the process.
- *Information quality.* Providing communication that is persuasive and motivating and creating the opportunity for communication that is instrinsically satisfying.
- *The communication process itself.* Determining how communication changes, under what circumstances and at what times particular types of communication are most effective, and how communication influences decision making and decision makers.

By and large, information processing in higher education is improvised, not planned. Although significant amounts of time are devoted to planning budgetary activities, personnel reviews, and other major activities, the majority of information disseminated within a college or university is communicated through telephone calls, chance meetings, after-committee caucuses, memoranda, or other comparatively spontaneous methods. As a result, members who genuinely need information often do not receive it, specific roles and responsibilities remain unclear, and information frequently arrives in a distorted form or an untimely manner. Because of this unmanaged flow of information, some organizational members become seriously overloaded while others suffer from inadequate information. An "information agenda" may help administrators plan communication more effectively.

The climate of an organization has an important impact on the events that take place there, and one important determiner of that climate is the personal style of key individuals in the organization. The pressure to exercise close supervision and to adopt a bureaucratic personal style in a complex organization like a university may be great, particularly for a central administrator. However, other administrators and faculty may react unfavorably to this kind of personal style.

The degree of specialization in the institution also influences the organizational climate and the institution's communication agenda. Medium-differentiated institutions are particularly susceptible to conflicts

between academic departments and the central administrative subsystems over the issue of whether the administrative or the professional subsystem will have primary authority.

Individuals throughout the organization have an impact on the communication climate, particularly when their job responsibilities place them in linking roles between the organization and others. Care must be taken to match personal communication styles with specific communication requirements of jobs or to provide appropriate communication training for individuals in positions with significant communication demands.

An organization's climate influences the people in the unit, and climates in academic departments can influence factors such as turnover, performance goals, and communication satisfaction. At the department level, as at the central administrative level, person-oriented climates have yielded more positive consequences than system-oriented climates.

Gathering data for effective decision making is often characterized by an information overload related to the uncertainty of the task. Computer information support has been helpful at institutional and inter-institutional levels, but the day-to-day decision making processes of many college and university groups are characterized by weak information bases, a wide range of communication links, and very flexible boundaries. These problems are compounded by discrepancies in power that members attribute to various positions and by ambiguous role definitions for key administrative positions.

Several patterns of decision making have been described in the literature, and adoption of problem-solving agendas has proved beneficial. Examinations of the faculty committee system have suggested communication problems: the limited resemblance between the nominal organizational hierarchy and the actual functioning of university committees, the use of committees in inappropriate situations, and the tendency of many committee members to employ a win-lose orientation.

Proponents of applying both participative management and management-by-objective (MBO) in colleges and universities have suggested there are certain benefits from using these approaches. When participative management or MBO has been applied, attitudes toward an institution's communication and decision-making systems have improved although improvements in performance have been less apparent.

In the existing research on information in colleges and universities there has been no systematic attempt to describe the information needs of the people who occupy key roles in the communication system. There is also a lack of research on the diffusion of information in higher education systems. More research on communication networks is needed to pinpoint discrepancies between actual communication roles and the roles suggested by the formal organizational structure. The effectiveness of various networks used to deliver quality information also needs to be studied further, as well as the ever-increasing impact of problems of information overload.

Additional investigations of specific relationships between personal communication style and other influences on organizational climate (such

as institutional size or institutional diversity) are needed. Studies of the impact of organizational communication climate on productivity in colleges and universities are sorely needed.

In the area of decision making, both research concerning the better use of data at lower operating levels in academia and general studies of decision making in academia remain appropriate topics for further investigation.

When institutions have moved beyond an improvised approach to communication, they have usually chosen an bureaucratic model that, although it does improve documentation, is typically characterized by limited responsiveness and sensitivity to the human characteristics of the system. More sophisticated project management and matrix approaches have been far less frequent. Having information available in a clear fashion does not compel people to action, and the organizational climate assumes an important intervening role. A critical need remains to establish a typology of conditions and behaviors to improve the available repertoire of communication responses individuals in colleges and universities may use.

Higher Education Communication Systems

On Systems, In General

A general knowledge of systems helps to explain the complexity of communication in academia by providing a theoretical model capable of integrating material from several disciplines. Educational administration, education, speech communication, anthropology, sociology, social psychology, psychology, and many professional schools have contributed to this literature. Reviewing the literature within the context of a systems model is not only convenient, but also will enable us to provide an overall picture of what is known.

Boundaries. A system is a set of interrelated or interacting components (Kuhn 1975). A component is the smallest identifiable unit in a system (Miller 1978). Although anything may be identified as a component—object, person, role, idea, etc.—a set of components is not a system unless the components interact with each other. Furthermore, the interaction must be such that the product of such activity is greater than the sum of the parts. The components interact to produce something that is, more or less, holistic. A football team, for example, is more holistic than a relay team because the football team members work together to execute plays they could not accomplish as individuals.

The boundary of a system is some kind of division that identifies the system (Kuhn 1975). Boundaries may be physical (e.g., walls); abstract (e.g., property lines); social, economic, or political (e.g., a list of members). Are students part of the school or are they customers? Are teachers part of the school or are they autonomous professionals cooperating with the school? The answers an administrator gives to these boundary questions determine much of the design of the entire system.

Inputs and outputs. A system produces outputs. Outputs may be things, products, services, energy, or information (Goldhaber 1979; Knight and McDaniel 1979). Outputs are not behaviors or interactions; they are the product of interactions. In the classroom, teaching represents an interaction, and knowledge may be identified as an output. Although one might judge the quality of teaching (an interaction) by evaluating the knowledge produced (output), teaching should not be confused with knowledge.

Inputs are elements brought in to a system from outside, and the exact nature of inputs is as diverse as the nature of outputs. A system transforms inputs into outputs. Teaching, for example, transforms the teacher's knowledge and attitudes, the text, the materials in the classroom, etc. into a package of knowledge presented to students.

A system can control its outputs by manipulating inputs. A system is constrained, however, by the quantity and quality of the inputs available to it. The only way a system can control the inputs is by producing an output that can influence the input. Such a system is said to have feedback and is called a cybernetic system.

System levels. Explaining a system by examining each separate compo-

nent is generally tedious and a waste of time. Seldom does every single component interact with every other component. More often, clusters of components form subsystems, which have the properties of a system (Farace, Monge, and Russell 1977).

All systems are subsystems to a larger system. Suprasystem is the term for a larger, more complex system that incorporates a system being investigated.

In the physical sciences, distinctions between components, subsystems, systems, and suprasystems appear to be made easily because the boundaries of systems appear to be physical. An arbitrary decision by a physicist or biologist to call one thing a system and another a component can be reinforced by an apparent physical separation. There is always some arbitrariness, however, when dealing with systems hierarchies or any aspect of systems research.

All surrounding conditions, including the suprasystem, that affect the focal system are called the environment (Sommerhoff 1969). Other systems at the same hierarchical level are called parallel systems. These active entities outside a system's boundary are the source of inputs to and the receiver of outputs from the system.

Structure, function, and process. A system is identifiable because of its structure, which consists of elements that are relatively constant over time (Cushman and Craig 1976; Fisher 1980). The most obvious structures are the structures of objects. These structures exist in space and are generally identified as being "in front of," "to right of," or "above," other elements. The structure is what identifies one object as different from another.

The *structures* of social systems are patterns of behavior, or cycles, occurring over time. When a behavioral pattern is repeated and predictable, the cycle is a structure. A structured class is different from an unstructured class, for example, because the structured class employs a predictable pattern of behavior.

Some subsystems in every system are devoted almost exclusively to maintaining some predictability. In an institution of higher education, most staff offices and any offices involved in internal standards are involved with maintaining structure. When a purchasing office, for example, insists that procedures for processing orders be followed, it may appear to be inhibiting progress. Actually, it is ensuring some predictability of activity; it is maintaining structure.

Function refers to the way a system fulfills its purpose (Dance and Larson 1976; Sztompka 1974). A subsystem that seeks to maximize function could do so to the detriment of the structure. New university programs are a typical example. Normally, such programs are allowed to bypass existing structures until their enrollments are well established. Too many exceptions to the rule, from the same program or from many, will threaten the legitimacy of the structure. Some structure must be maintained no matter how important the function.

A particular role or subsystem can be identified by either structure or

function. For example, a teacher performs a regular and predictable activity called teaching. The subject taught and the knowledge produced are outputs. Persons who labels themselves as teachers of speech communication, for example, have identified both the structure—teaching—and function—knowledge of speech communication.

Process refers to system changes over time (Cushman and Craig 1976). How can the decrease in enrollments be stopped? How should programs be adjusted to meet the challenges of the current economic situation? These questions seek an analysis of process and are concerned with creating or preventing change within the system. These questions are about a system evolving or adapting to contingencies. Process analysis seeks to describe evolution and contingencies.

Although the structure, function, and process of systems may appear technical or difficult, we all use structural, functional, and process analyses in our day-to-day thinking. All decisions involve some assessment of how things are. Problem solving, for example, assumes that a person sees something that might be called a problem; making a choice assumes that a person sees the opportunity for choice. Such a preliminary assessment is a *structural analysis* because it involves recognizing the arrangement of events or components. Any increase in knowledge or familiarity of events is the product of a structural analysis.

To make a decision you need to know more than what is available; you must have some idea of what you want. Determining what you want involves a *functional analysis* because it requires assessing desired outputs and the potential for available activities, or inputs, that can produce those outputs.

Knowing what is available and what is possible must be contrasted with what is desired. You may want the satisfaction of eating a cheesecake (functional) but also know there is no cream cheese in the house (structural). Given the circumstances, you will choose a course of action you believe has the greatest likelihood of yielding the most benefit. You make a contingency decision. You complete a process analysis.

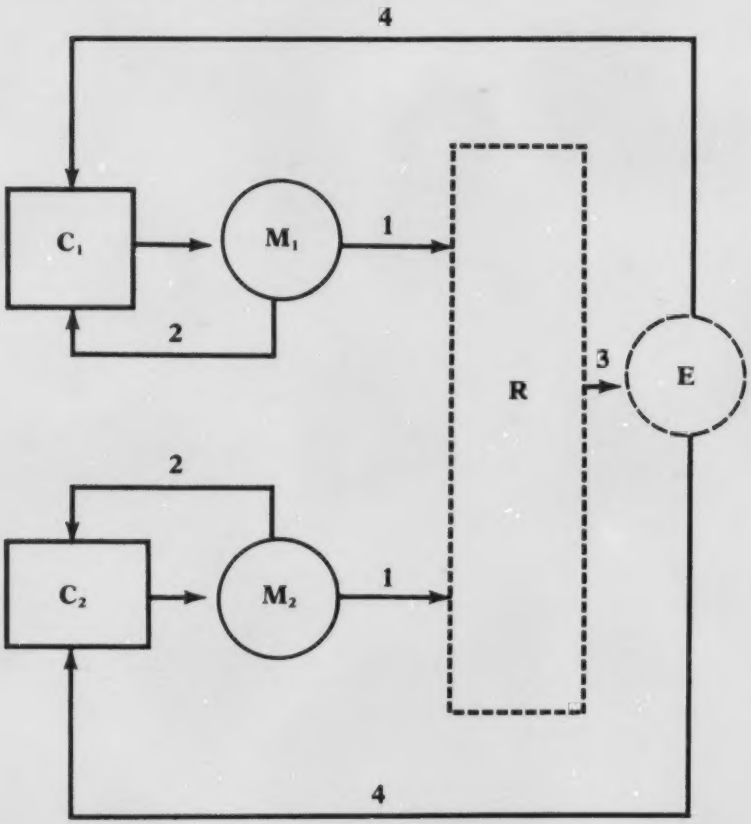
In this monograph we are concerned about the structure, function, and process of higher education systems and the communication that occurs in these social systems.

On Communication and Social Systems

The structure of communication is displayed in the flowchart in Figure 1. Each C represents a communicator, and, although C may be a culture, a society, an audience, or an aspect of a personality, the structure of communication is more easily understood if C is regarded as one human being.

C's produce M's, or messages, which are symbolic outputs packaged in some physical form—sounds, spatial arrangements, touches, etc. The physical aspects of messages are not what separate them from other outputs; rather, the distinction is that messages are outputs with the potential to influence beyond their physical attributes. When someone says, "Come

Figure 1: Structure of Communication



1. C_1 and C_2 are Communicators (e.g., humans, groups, organizations, etc.)

2. M_1 and M_2 are Messages produced by the Communicators.

3. R is a social or role relationship that the Communicators may share (e.g., superior-subordinate, friends, etc.)

4. E is an Episode, when Messages become part of a dialogue and not two monologues.

here," for example, the message is packaged as a sound, and although the listener will react to volume, rate, or pitch of the sound, the listener will also react to what the sound may represent. In this case, the sound may represent an instruction or invitation for the listener to approach the sender of the message.

What the physical aspects of the messages represent, the symbolic significance, is usually thought of as the symbol's meaning (Berlo 1960). There are, of course, several meanings for any message. The sender of a message may intend the message to represent one set of thoughts, and the listener may understand the message to represent another set. Furthermore, the sender's and the receiver's view of the meaning of a given message is altered by the messages that came before it and the messages that came later. The important things to remember are that the meanings of messages are in the minds of the users of the messages and not in the messages themselves, and that meanings change as part of a conversation.

The arrows from M_1 to C_1 and from M_2 to C_2 are displays of the ability of humans to monitor their own messages (Fisher 1978). Individuals can hear themselves talk or watch themselves write to judge whether the output was what was intended. This is a very important loop. It suggests that the only person who can evaluate a message with respect to its motive is the person who produced it.

M_1 and M_2 are directed at R, the relationship or any specially constructed reality (Pearce 1976). A relationship is a social context. Relationships may be very personal (e.g., friend, lover, brother), informal (acquaintance, student), or formal (superior-subordinate). All the C's in any particular relationship may be part of the communication (e.g., both parties to a marriage), but communication often happens when only a portion of R is present (e.g., mother talking to daughter as part of family). The important thing is that relationships will influence how one communicator sees another communicator's messages (Swanson and Delia 1976). This is the explanation for $Message_1$ not being aimed directly at $Communicator_2$ and for $Message_2$ not being aimed directly at $Communicator_1$.

R produces E, an episode (Pearce and Conklin 1979). An episode is a sequence of messages in which one message influences another. Sometimes this patterning in the messages can be deciphered by nearly anyone, but at other times the patterning is recognizable only to the communicators. In the latter case, this means that either the relationship is very personal or that the relationship is a social context that you, an observer or intruder, are not familiar with. If you have ever entered an ongoing conversation and had to stop to figure out what was going on, you know this circumstance.

It is from the episode that communicators learn what each other is saying. It is from the context of what was said before and what came later that we finally determine the meaning of a particular message.

Both R and E are in dotted lines. Sometimes people talk in the presence of other people with very little regard for who they might be talking to

or who might be listening to what they are saying. Sometimes people talk to themselves while other people watch. Just about the only pattern that emerges is a turn-taking pattern in which one talker stops while the other person talks (Berlo 1960). There is very little influence by a relationship and very little patterning in the episode. There is also very little communication *between* such people.

Salem has two aunts who talk like this. At a family gathering, they will bombard each other with the latest news about each other's families. It is obvious they have not developed much of a relationship because the only pattern in the episode is a turn-taking pattern. (Sometimes this disappears and they both talk at once for long stretches of time.) If you recorded their "conversation" and deleted what one of them was saying, what would be left would sound like an informative speech on the recent history of one of the families. Each aunt is so busy reminding herself about the wonderful time she had last year that she never hears what the other is saying.

The dotted lines also account for the circumstances when the communicators have different ideas about what their relationship is. You may think you are talking to a friend, but the friend may think she is talking to a competitor. The episode will have a very erratic pattern.

The flowchart also has two different lines from E: one line to C_1 and one line to C_2. These lines represent the tendency for each communicator to recognize different patterns in the episode (Laing, Phillipson, and Lee 1966). A good way to judge if two communicators understand each other is to compare their impressions of an episode. The more these two impressions are similar, the more the two communicators understood each other.

Information is the term communication scholars use to discuss structure. The information theorist is concerned with fidelity—the extent to which the structure of one person's messages is clearly represented in the other person's reception of the episode. These theorists are concerned with the extent to which two people see the same structure in the episodes. The extent to which people understand each other is the principal interest. The study of information and related problems is the most popular area of investigation.

Communication is also exchange, involving evaluation and persuasion. Of particular concern is the value of messages, the extent to which messages from a particular communicator will affect what the communicator can receive from the episode and the extent to which the episode will influence the messages produced by the communicator. The idea of exchange, evident in Homans' elaboration of social exchange theory (1974), involves a concern for the function of a communication system. How do messages and episodes change over time? How do the structure and functions of communicators differ from one time to another? What feedback is necessary to improve growth and prevent drag? What cycles alter the system? What cycles do communication systems move through? These are questions about process. Communication is an information exchange process.

Communication systems differ from other social systems only in that the inputs and outputs are messages and episodes. Information processing is only one aspect of a system. Systems also process matter and energy. Higher education is no different.

Academic Systems and Communication

A college or university exists in a physical environment. This environment influences the nature of raw materials that are converted into classroom buildings, dormitories, offices, and libraries. Other matter-energy flows include food, electricity, office equipment, and audiovisual material. When an administrator completes the capital outlay and the maintenance and operations portions of the budget, the organizational subsystems concerned with the physical plant are set in motion. The roles in the lower echelons of these subsystems process very little information; they are converting, moving, or maintaining matter and/or energy.

The remaining inputs to an educational system come in the form of information. The psychosocial environment of higher education provides social norms and values, individual needs and personalities, skills, knowledge, etc. These inputs are recognizable only to the extent they are actualized in information or some communication activity. What seem to be fairly abstract inputs are easily identifiable as degrees, certification documents, lectures, research, and many varieties of talk. Social input is inherently symbolic and packaged as information.

The economic environment provides a method of exchanging goods and services. The input is money or several forms of money. Money itself may be regarded as information (see Miller 1978). Certainly all those artifacts of economic exchange (invoices, receipts, ledgers) are information.

The political environment constrains higher education insofar as institutions of higher education have little or no direct impact on the inputs received from government. Some institutions receive economic imput from government in the form of budgets, but all institutions must act within the rule of law. This more general input comes as regulations and policies from various governmental sources. Again, the input is information.

Higher education is primarily an information-processing system, and the various ways it processes information will be examined in the next chapter. Communication difficulties are more than irritants to such a system; they are life-threatening. What is more, if such difficulties should appear pervasive, the very legitimacy of the contrivance is threatened. If people who are in the business of communication cannot communicate among themselves, knowledge will not be pursued in current organizational settings (see Perrow 1970).

Higher education is similar to all social systems in that it is contrived (Katz and Kahn 1978). Colleges and universities are not physically or biologically determined events. They are purposefully constructed to maintain some predictability of activity, to define a functional social structure.

The components of social systems are roles and role relationships. Colleges and universities do not employ the whole person, but a portion of a person's behavioral repertoire that will be combined with other roles to form some symbiotic and predictable relationship. In any organization, the people themselves are part of the social environment, and the employee contributes skill and labor in exchange for some reward. *Partial inclusion* is the term Allport used to describe this segmental involvement with a social system (Katz and Kahn 1978).

An organization, then, begins with a list of behaviors that are expected to be performed in the context of organizational roles. It induces people to contribute behaviors that fulfill those expectations, and it provides mechanisms to ensure that such expectations are met in a predictable fashion. Some structure is necessary to identify a system as a system.

Meyer (1975) argued that teaching is not an activity that is part of the structure of higher education.

> *Colleges . . . are not organized education: if one defines them this way they appear impossibly disorganized and inept. . . . Rather schools are organizations processing ancilliary resources for social activities whose meaning is established and controlled elsewhere (p. 4).*

Meyer's argument is based on a description of what colleges and universities actually do control with respect to education. Administrators follow formal guidelines for every manner of administrative behavior from transferring funds to reporting schedules. What they administer—education—has no institutional guidelines that define expected behaviors of educators when they teach. Institutions have seldom, if ever, required specific behaviors or methods of teaching. Rather, they leave such control to others and manage only definitions by ensuring that a "bona fide" teacher is in an "approved" classroom with "registered" students.

> *Thus, Econ 1, as an organizational element, has nothing to do with substantive instruction in economics (which would require some sort of organizational definition and control). It is an assembly of a certificated and assigned teacher, a regulated list of students . . . a space and some resources (Meyer 1975, p. 6).*

When these elements are brought together, education is expected to take place.

Meyer (1975) concludes that decision makers attend to pragmatic definitions of changes more than to their internal implications for internal activity. The course name, the department name, the degree name change, but the activity does not change, or the activity may change as long as the same name can be employed.

This may be an overly pessimistic view, and surely unionization and accountability have brought greater attention to the activity of education. However, our own survey of the research on communication in higher

education administration reveals that nearly all such research is about external communication:

- with local government officials (Bard and Olinsky 1974)
- to prospective students and families of prospective students (Carlson and Berlet 1976; Treadwell 1976; Whalen 1975; Ihlanfeldt 1975)
- between schools at the same or different levels (Dobson and Dobson 1977; Donovan and Schaier 1978; Goddu 1976; Ensign 1974; Boldt 1977), alumni (Williams 1979), student services (Kelly 1975; Otto 1974), institutional advancement and advertising (Stear 1977; Hull et al. 1979; Rowland 1977; Peltason 1979)
- about evaluating external communication in general (Goldhaber 1974; DeSantis 1978).

From Meyer's perspective, this body of research and the trend it follows represents just so much checking on the legitimacy of definitions. It is research directed at improving those means to verify categories, and it is research describing those methods most likely to convince elements of the environment that the appropriate terms are being used.

Meyer's critique is enlightening because it reminds administrators of how little they can control directly. Some structure is necessary for every social system, but higher education appears to be loosely structured only with respect to activitites that are directly a part of education. Higher education possesses a tight structure on the delivery and processing of ancilliary services.

The processing of the matter and energy that is part of ancillary services such as building maintenance, the bookstore, or the cafeteria happens in a tight structure of job procedures, relatively close supervision, and monetary rewards. What Meyer suggests is that the information-processing activities associated with actual education do not exist in such a structure. When an academic commmittee approves a new course, the committee is only approving the description of the course, the "definition" as Meyer said. The committee approval signifies that the course meets socially acceptable definitions, and the committee assumes that the course will be taught within the confines of a socially acceptable definition of "teaching." The actual teaching of the course is not supervised, but is left to the professional teaching the course. It is because the actual education activities are *indirectly* controlled through the management of the definitions that Meyer called this phenomenon a loose structure.

All this suggests one other attribute of higher education systems. They have diverse histories and evolutionary patterns. Organizations may all have the same programmed responses to change. However, the contrived nature of social systems is such that the common methods of responding are difficult to perceive. This difficulty may be less a problem with organizational behavior and more a problem of organization theory. It may be reasonable to assume that in a given set of circumstances a particular social structure will emerge for a particular function, but to match en-

vironment to structure to function requires at least a typology of all three or a trait measure that can be applied to all three. Such sophistication is only now emerging.

Even if such evolutionary patterns could be discerned, the administrator is less concerned with determined reaction and more concerned with purposeful action. An administrator needs to know what feedback is necessary to control the circumstance. The optimum situation would be one that provides the negative feedback needed to move away from unfavorable ones. Very little literature on higher education administration approaches these problems of adaptation and revitalization directly.

Since social systems are contrived, decisions are required to define social structure. Although there is little literature about the adaptation and revitalization of structures and functions, there is considerable literature about the decision-making processes needed to construct, destroy, or modify social systems. Communicative process and social process come together in a decision. The emergence of decision will reveal much about the contrivance of a relationship (R in the model) or a social system.

We have organized the remaining chapters of this monograph under titles appropriate to our definition of communication and to the current terminology of organizational research. The next chapter will explore problems related to information, from ambiguity to overload. Since information processing is the primary function of higher education, it seems appropriate to begin with an examination of this type of problem. What is more, exchange and process will not occur without information.

The chapter following focuses on communication exchange and organizational climate. Topics typically associated with these terms are motivation and satisfaction. We will present information about communicative function, the extent to which messages and episodes persuade.

Finally, we will present the literature about communicative process and decision making.

Information

Introduction

In the last chapter, we described the general relationships between higher education and communication. Communication was defined, and we presented a model of how the information-exchange process works. In this chapter, we will extend that model as a method of reviewing communication problems associated with information.

This chapter begins with an acknowledgment of the origins of contemporary investigations of information and information processing. These earlier works were not designed to explain all communication, and they did not address problems of persuasion or of communicative development. These pioneers were mostly concerned with the fidelity of communication. They wanted communication to be clear enough for people to understand each other.

The great strength of these earlier works was that they pointed out much of what we all take for granted. They analyzed the message, making distinctions about its content and the nature of the language used. They categorized the ways in which we communicate and recognized that messages that are spoken have different meanings from those that are not.

In this chapter we review literature about three information problems: (1) uncertainty (Do people receive the information they need?); (2) timeliness and distortion (When do they get the needed information? Is it in the most accurate and useful form?); and (3) overload (Do people get too much information?). From this review we develop an "information agenda," which we hope will help administrators in higher education plan communication more effectively.

Key Concepts

A historical note. In 1948, Claude Shannon published an essay that introduced the "mathematical theory of communication." The theory provided a set of technical terms for describing information and a flowchart that modeled the transfer of information and suggested a method for measuring and analyzing such flows. Information theory was born (Shannon 1948; Shannon and Weaver 1949).

Shannon initially was interested in the electronic aspects of data transfer; the original theory did not account for the accuracy of the information provided by the source or the value of the information to the receiver.

The entire model is best understood by considering a telephone conversation. An information source—a person holding a phone—constructs a message that is spoken into a transmitter (the bottom portion of the common hand-held phone). The transmitter converts the message into a signal (electrical current) that is fed into a channel (phone lines). The channel carries the signal to a receiver (the top portion of the hand-held phone) that reconstructs the message and makes it available to the destination (the person on the other end of the line). At each point of conversion from signal to message or message to signal and especially in the movement of the signal in the channel, there is danger that the amount of information being communicated can be diminished by a disruption

or alteration in the signal. The name for this disruptive culprit is *noise*. A poor phone connection is "noisy."

There are several ways to overcome noise. A source may repeat the message or try to rephrase it. A source may try a different channel and call again, hoping to get a new phone line. The source may call someone with a better phone system (clearer channels) to relay the message. In a written message, the words alone may be insufficient, and so a picture, diagram, or table might be used. In a face-to-face communication the spoken word may be supplemented and reinforced by a touch, tone, or gesture. All these methods of reinforcing or repeating the message are called *redundancy*.

Berlo's extension of earlier communication models is noteworthy because he tried to account for psychological qualifiers and to model the transfer of information between two humans (Berlo 1960). He discarded the terms *transmitter, destination,* and *signal*. In his model, the source and receiver are humans possessing knowledge, attitudes, and skills; the source and receiver must also be understood as representatives of social systems and cultures. The source manufactures a content (an idea) that is coded (put into a language) and stylized and transfers the final symbolic package by choosing one or more sensory channels (seeing, hearing, etc.) as a method of transfer. His explanation of human communication included an integration of several learning theories, theories of attitude change (e.g., Janis and Hovland 1959), social psychology (Mead 1934), social psychiatry (Ruesch and Bateson 1951), and general semantics (W. Johnson 1946; Hayakawa 1949). This source, message, channel, and receiver (SMCR) model was the basis for a generation of research.

One of the strengths of SMCR was Berlo's taxonomic rigor. He subdivided the term *message* into *content* and *code*, noting that both content and code have *elements* organized in a *structure* and that all portions of a message are "treated" or stylized to reflect the various internal characteristics of the source (Berlo 1960). He noted that the term *channel* has been used to mean the matter or energy package of the message (the signal), the mechanism that makes these packages transferable (the transmitter and receiver in the old Shannon model) and the actual method of moving these packages from one place to another (Shannon's original use of the term channel). He reminded his contemporaries of the importance of definitional clarity in the construction of their own models.

These general models of the information flow were first applied to the organizational context (a *relationship* in the model presented earlier) by Redding (Redding and Sanborn 1964; Redding 1972) and later refined by Goldhaber (1974). There have been several alternative models presented since then.

Uncertainty and information. *Uncertainty* is the inability to predict a situation or the outcomes of a situation (Galbraith 1977). Some situations are inherently more unpredictable than others because they involve more factors and because some factors can be combined in more ways than

others. The flip of a coin is easier to predict than the turn of a card because only two outcomes are possible for the coin, but fifty-two outcomes are possible for the cards. More random combinations are possible, of course, with two cards than with two flips of a coin.

Shannon was faced with the problem of reducing the uncertainty in telephone communication. If a message or electronic element reduced the number of consequent messages or electronic elements that needed to be considered or if a message or electronic signal reduced the apparent randomness in a situation, the message or signal provided information. The amount of information was measured by the amount of uncertainty reduced. He constructed precise mathematical formulas to describe these relationships.

The application of this model to human communication systems requires some psychological qualifiers. Uncertainty, for example, was represented as a mathematical index reflecting the variety and frequency of various electronic elements in the system and the probabilities for their use; a physical circumstance could be measured with respect to the uncertainty in it. Such an index also reflects the amount of information that can be reduced.

Organizational researchers have attempted to construct similar indexes of task complexity (e.g., Van de Ven and Delbecq 1974) that, in turn, should quantify the information required to complete a task. A problem develops, however, when one tries to use uncertainty inherent in a physiological circumstance to explain doubt in the mind of a human who must perform in that circumstance. The amount of information required to complete a task is determined by the uncertainty inherent in the nature of the task and, simultaneously, by the perceived uncertainty in the mind of the person who must perform the task. An experienced dean of a school that offers diverse degree programs in a variety of disciplines may, in fact, require less information than a new dean of a school that offers a few degrees in related disciplines because the new dean has a greater perceived uncertainty.

Information is not data. Data are stimuli with the potential to become informative or meaningful (Garrett 1973). When data reduce uncertainty, there is information. If data do not affect the level of uncertainty, there may be redundancy. Some data may confuse other information and, therefore, act as a sort of message noise. Data do not become informative until they improve familiarity (Ackoff and Emery 1972) or are useful (Knight and McDaniel 1979). Utility is not inherent in the nature of data, but utility is perceived by communicators in the creation of their episodes.

A particular message may become information because the communicator perceives something meaningful in the physical aspects of the message (e.g., getting roses instead of dandelions or getting an interview with the boss instead of a simple phone call). The message may be information because the communicator perceives some meaning in the words that were used (e.g., "satisfactory work" instead of " outstanding"). The communicator may see the order of messages in the episode as meaningful

(e.g., the first question asked in the employment interview was about marital status). A message becomes information when a potential symbolic impact is perceived by a communicator. The messages in the episode generate the communicator's perception, and the perceptions, in turn, determine the messages the communicator will offer as part of the continuing episode. In this way, messages contribute to and are, at the same time, the products of perceptions.

With the exception of the ancillary services (maintenance, the physical plant, the cafeteria, etc.), every other activity performed in a higher education system is information processing. Information changes its form from lecture notes to a lecture, from rough draft to manuscript, from committee meeting to minutes, from telephone conversation to memo. Information is often converted from one language or set of symbols to another. Examples of this are when the same executive decision is "translated" into language suitable for alumni or a professor "translates" his or her research into language suitable for a particular class. Information is also related to other information to arrive at decisions or to interpret the significance of a particular piece of information. When the input is information and the output is information, the system is processing information.

If the organization does not provide all the needed information, some uncertainty will remain. A member of the organization may wait, delaying action until the needed information is provided, or the member may act without the needed information, risking error. In any event, a lengthy or persistent period of uncertainty may lead the member to escape from the situation—to leave the university. Most universities, for example, attempt to issue contracts at a specified time in the academic calendar. If contracts are very late, faculty may leave in spite of assurances from a chairperson.

Very often, if the needed information is not provided, a person may "absorb the uncertainty" by "reading between the lines" to fill in the missing pieces (March and Simon 1958). In other words, members of the organization will supplement incomplete information with some of their own hunches. The incomplete is made complete, often in an unintended way. Uncertainty may result in a distorted message.

If the organization does not provide the needed information, its members may be required to find the needed information on their own. New faculty members are often faced with this situation during their first year. The university cannot provide all new members with the specific information they may need. The new members must initiate their own communication to satisfy their needs.

The extra effort required to reduce a personal uncertainty is generally easy to maintain for a limited period, such as a first year. If extra effort becomes the norm, it will drain the member of the organization. The demands to produce one's own personal information may require effort beyond one's capacity. This type of information overload is generally recognized as "burnout." It is likely to occur in new programs or departments that seem to constantly change goals or faculty responsibilities or in old

programs that do not revise absolute goals or responsiblities to meet changes. Just as one fire is put out, another is started.

In an attempt to reduce uncertainty, an organization may provide too much information. Then a different, but more obvious, overload is produced. How many memos are really needed to keep everyone informed? How many meetings do some members really need in order to stay informed. How much detail is really needed? Reducing uncertainty most effectively means providing only the information that is needed.

The content of communication. What can information be about? What types of information do people need? Messages may be classified by their contents.

Messages and episodes involve one of three contents. Task messages are about a job, a problem, a result; this content contains data necessary for one or more communicators to accomplish their assignment. Policy messages deal with organization-wide concerns and define, alter, or augment formal role relationships. Human contents include some organizational-personal matters such as salary, evaluations, and purely social topics such as family, gossip, sports, or diets. Task information enables individuals to fulfill their responsibilities; human information motivates and satisfies; and policy information defines and clarifies responsibilities and procedures. All these types of information are necessary to constitute any social system.

An exhaustive list of such contents in higher education is impossible. Table 1 displays some common examples of the three types of content.

Verbal and nonverbal communication. Verbal communication refers to information presented in some linguistic form, in some language. Nonverbal communication refers to content obtained in nonlinguistic forms such as voice inflection or touch. In a social system as diverse as a university, the choice of language is critical. The message must be presented in a language appropriate to the roles participants assume in the relationships. Jargon, whether bureaucratic, governmental, social, or discipline-specific, will easily change information into noise if the participants are not directing their language at the appropriate audience. Similarly, an inappropriate gesture, touch, or movement, will cloud otherwise clear language.

Vocal and nonvocal communication. Communication is vocal if it involves speech. All communication not expressed as speech is nonvocal. The most common type of nonvocal communication is written communication. Very often determining whether to put something in writing can be a crucial decision. For some, the fact that information is in "black and white" is important.

The verbal and vocal distinctions are important when considering the amount of information that can be communicated in a particular circumstance. On the telephone, information cannot be communicated nonvo-

Table 1: Messages Classified By Content

Task Messages—messages about the job

test orders
purchase orders
class assignments
registration forms
most faculty meetings
grade reports

Human Messages—directed at a person about a person

your salary
marriages, divorces, births
your evaluation
friendships
jokes
news
movies, plays, sporting events

Policy Messages—directed at formal roles, from the organization about the organization

salary schedule
school calendar (deadlines, etc.)
job descriptions
organization chart
formal evaluation procedures
instructions for completing a form
registration methods

cally, and nonverbal information can be communicated only through aspects of speech such as inflection, pitch, or volume. A letter or memo has an advantage of apparent permanence but will not communicate information through any vocal device. Face-to-face communication will provide the most information since it communicates both verbally and nonverbally and both vocally and nonvocally.

Methods of communicating. How is information diffused? What methods are used to connect communicators so that messages can be exchanged? The answer to these questions could be any of the following: a bulletin, a memo, a policy book, a letter, an informal discussion, a committee meeting, a public presentation or speech, a film, or the telephone. These different devices have most often been called *channels* in an attempt to extend Shannon's earlier work, described at the beginning of this chapter. Because of the confusion surrounding that term (noted earlier), we shall call these devices simply *methods of communicating*.

We shall confine our discussion here to a consideration of the planned use of methods of communication and the unplanned or improvised use. We shall identify those planned methods and compare them with similar improvised methods. We will then use this classification in the consequent literature reviews in this monograph. A more extended development of this classification scheme may be found in Johnson (1976, 1977).

The first planned method is called *documentation*. A document is a written or typed method of communicating that conforms to an organizational standard for presenting a message. A form, such as a voucher, is designed so that specific information (prices, dates, etc.) can be entered in certain spaces on a page. Policy statements are often written according to a required scheme specifying what information is required, the order of that information, and some notation method for identifying pages, paragraphs, and lines. In a university, documents also include notices, contracts, bulletins, and formal reports.

A document is a planned method of communication because of the presentation scheme. Someone, somewhere, considers what has to be put in print and what the most useful method of presenting, storing, and retrieving the needed information is. Improvised, written, or printed forms (letters, memos, notes, etc.) occur as the need arises or on the spur of the moment.

A second type of planned method of communicating is called *preplanned formats*. This method may involve few or many communicators and is not mediated by print or a form of print. Communication is limited, however, by an agenda. Interviews, conferences, some committees, and nearly all public communication are preplanned. One or more of the participants thinks about the content and the order in which it should be presented. Formal rules such as parliamentary procedure may be employed. Information is shared, some persuasion may take place, or some routine decisions may be made.

This type is in sharp contrast to informal face-to-face encounters such as the chance meeting of colleagues, lunches, hurriedly called committee meetings, the improvised telephone call, or the conversation that develops when someone simply walks into an office. The only restrictions placed on such improvised communication come from social and cultural norms or from some unique norms that communicators may have placed on each other. The type, amount, or form of information exchanged may be limitless, allowing, on the one hand, invention and creativity and, on the other hand, distortions and prattle.

The third planned method of communicating is *collective decision building*. This method involves groups of five to ten people whose purpose is either to make or implement one specific decision or to make policy decisions that affect all the participants. These decision groups may take the form of project teams called together until a project is completed or they may be executive councils that meet frequently to determine policy. On a campus some examples include school councils, councils of deans, faculty senates, and graduate councils.

Collective decision groups are significantly different from the preplanned format of committees. Committees generally have more members than decision groups, and their only involvement with policy is to execute it. A library committee, for example, will supervise the dispersal of money, but the formula for dispersal was set by organizational policy determined by an executive or an executive council.

Members of collective decision groups find that their organizational identity is linked to the group. Although the members of a board of regents may be identified as "regents" from certain areas or schools, all those on the campus(es) they supervise know them collectively as a "board." This is significantly different from the identity awarded a faculty member who, for example, is the member of a committee as important as the appeals committee for promotion and tenure; the member is first identified as "faculty" and then as a member of the committee.

The method of communication an administrator chooses will affect all aspects of information transfer. In general, more information will be communicated through collective decision groups than through preplanned methods, more through preplanned methods than through documentation, and more through documentation than through improvised communication. Sometimes, the improvisation is superior, but it is quickly changed to a planned method if it carries more information. Two chairmen may be playing golf, for example, when one introduces a topic of common concern. If the topic requires little information exchange, the entire matter may be resolved between holes. If, on the other hand, the topic requires more informaiton, documents will be consulted, interviews held, and, perhaps, committees appointed.

It takes time to design a form, write policy, create an agenda, or perform in a decision group. Cost (time, money, and human energy) increases when communication involves greater planning. If the extra information that can be communicated through greater planning is needed, the cost may be justified. The wrong method for a particular circumstance will aggravate a problem and add waste, as the sections of this chapter dealing with uncertainty, distortion, and overload demonstrate.

Communication networks. Communication occurs in a relational context. When two people communicate, they construct messages to have meaning as part of the relationship they have with each other. In an organization, messages travel through many relationships, with each relationship altering or modifying messages to make them meaningful. When the dean informs the chairperson about something that must be communicated to the chairperson's faculty, the dean's message will take on added and perhaps unintended meaning as the chairperson informs each faculty member. Each person will interpret the message in the context of the relationship he or she has with the chairperson. What is more, the dean's message is subject to alteration when one faculty member discusses the message with another faculty member within yet another relational context. To effectively communicate the message to the chairperson, the dean be concerned with his

or her relationship with the chairperson, but to communicate the message effectively to the faculty, the dean must be concerned with the relationships between the chairperson and faculty and the relationships among the faculty members. The dean must be concerned with the entire configuration of relationships. Such configurations are called communication networks (see Rogers and Kincaid 1981).

Networks may be classified according to the direction of the communication within the formal relationships of a hierarchy. Horizontal message flows occur between members of the same rank. Vertical message flows occur between members in a direct line of authority. Downward flows begin at the supervisor and are sent to subordinates; the reverse pattern is called upward flow. Diagonal patterns exist between members of different rank that are not in a direct line of authority. Informal patterns that do not reflect organizational relationships but are based on social relationships are called the grapevine.

Organization charts display an organization's structure—that is, its intended division of labor and chain of command. Such a chart also implies the formal communication network along with the concomitant directional flow of information. Faculty members, although free to communicate with anyone, should be spending most of their time communicating with others in their department. Certainly some members of a department should be communicating with similar departments, linking the departments in schools; chairpersons, as part of their responsiblities, are required to perform such linking. Similar patterns are suggested at higher levels. Just as the university's organizational chart suggests an organized, nonrandom pattern of work, it also suggests an organized, nonrandom pattern of communication. Just as a university's organization chart identifies each member's formal role (dean, faculty, etc.), it also suggests a communication network role.

Although there are at least ten discrete communication network roles (see Rogers and Agarwala-Rogers 1976; Farace, Monge, and Russell 1977) only four will be considered here: the clique, liaison, bridge, and isolate. A network clique is composed of individuals whose relationships and interactions are mostly with each other. The emergence of a clique in a network is as important as the existence of a work group in a division of labor. It indicates the emergence of a subsystem with its own sense of identity and internal cooperation. Since the majority of their interaction is within the clique, cliques limit the interaction of their members and thereby restrict the flow of information throughout the entire organization. Cliques may emerge because members consciously decide to limit their interaction to a few relationships or because of a physical circumstance such as having offices in the same building or on the same floor.

The existence of cliques indicates that communication relationships are not random, in much the same way as the existence of an academic department indicates that the teaching that goes on within it is different from the teaching in other departments. A purely random network with few cliques would ensure chaotic information exchange as a randon as-

signment of instructors to courses would ensure chaotic education. Generally, cliques in a network are a good thing as long as the cliques are linked together.

The two most important network linking roles are liaisons and bridges. A liaison is a nonclique member who links at least two cliques together, and a bridge is a clique member who links the clique to at least one other clique. These two roles are essential to keeping naturally emerging cliques connected and informed of each other's activities. They are also important to organizational climate and decision making and will be discussed in later chapters.

An isolate is an organization member whose communication is insufficient to establish more than one relationship. New members to most university communities begin as isolates, and there are some older members who withdraw into this role. Some might argue that faculty ought to be isolates, maintaining only their relationship with the chairperson (and, of course, students), although we find this to be an extremely undesirable position. As with all network roles, there is nothing inherently harmful or beneficial about being an isolate; rather, it is the nature of the isolated organizational position that determines the value.

The impact of these network roles is demonstrated by recalling the example that began this section. The dean may believe that a certain chairperson is a leader in a cohesive department and is performing a crucial bridge or liaison role with other departments; the dean will design a message for the chairperson assuming that this type of network exists. Let us assume, however, that the actual network is significantly different. The "cohesive department" is not one clique but three, and although the chairperson is a bridge, he does not link the cliques in his own department. The dean's message will be given to the chairperson, who will communicate it to the members of one of the department's cliques and to the members of a different department. Believing that his interview with the chairperson is sufficient, the dean will not send a memo to the chairperson's department. As a result, two-thirds of this department will not be informed.

An information agenda. What follows is a review of literature about information and information problems in higher education. The purposes of this review are to describe the scope and magnitude of these problems and to provide some direction for their solution. The general solutions to these problems are expressed as an information agenda for administrators in higher education. The entire agenda is displayed in Table 2.

The first five items on this agenda are directed at reducing the likelihood of uncertainty. Following each item are the page numbers in this chapter where that item is discussed. Acting on these items will improve the chances that people get the information they need.

Items six and seven are about the quality of information. Again, the page numbers are a handy reference to a more elaborate explanation. Needed information must come in a complete form and on time.

Table 2: An Information Agenda for Administrators in Higher Education

1. Find out the information needs of others in the system. (pp. 24–25)

2. Determine the sending responsibilities of other members with respect to the already determined content areas. (pp. 24–25)

3. Identify the various languages and messages most frequently contacted and learn the nonverbal cues most important to others. (pp. 25–26)

4. Assess the ability of existing methods of communication to provide needed information. (pp. 26–29)

5. Assess the status of existing networks with respect to the institution's design and augment current flows with additional reporting procedures or information sources and personnel to reinforce key links. (pp. 29–33)

6. Reduce processing time by directing information at a key group of people and overcome sequencing difficulties by proper planning. (pp. 33–35)

7. Plan the periodic use of one or more of the checks on distortion. (pp. 35–36)

8. Identify potential overload problems and adopt the appropriate response. (pp. 37–38)

The final item could have been several items. There are many ways to handle overload, but some ways are better than others for a particular circumstance. The circumstances need explanation, and so the referenced pages need to be read more carefully than others.

Uncertainty in Higher Education

Social perception problems. The first item on the information agenda of an administrator in higher education should be to find out the information needs of others in the system. The second item should be to determine the sending responsibilities of other members with respect to the already determined content areas. The administration needs information about information sources as well as receivers.

Part of individuals' perceptions of the relationships they have with others is the perceived need for both the sending and receiving of information. If people do not know what others need to receive or if people do not know they are expected to send information, the needed information will not arrive.

Gustad (1962) investigated the perceptions that administrators and faculty have about each other. He correlated the responses of the two groups to a set of items about faculty activities (task content) and faculty

rewards (human content). The results would indicate the extent to which the two groups agree about faculty responsibilities and benefits. The correlations were very small (in some cases negative) on all the human items—topics such as how faculty are rewarded, what activities should be rewarded, or the availability of rewards. The principal task item, what faculty do, yielded a relatively weak correlation coefficient of .70. If faculty and administration don't agree on the nature of their relationship, they will not provide each other the needed information. They will not know what is needed.

Although there is a general pattern of misperceptions regarding roles and role relationships in many organizations (Farace, Monge, and Russell 1977), academic misperceptions are different. Some role ambiguity and role conflict exist (Medrano 1978), but the problem does not appear to be one of task uncertainty. Most university workers tend to understand their own personal responsibilities well but are uncertain about how their role relates to other roles. They are also uncertain about reporting lines and lines of responsibility (Goldhaber and Rogers 1978). These are policy matters that ought to define the organization.

The perceived need and desire for human and policy information is great (Lockwood 1977), and higher education does not provide as much as is needed (Goldhaber and Rogers 1978). The information may not be forthcoming because of an inaccurate perception about what is needed. The simple unavailability of the needed information or the apathy of sources of information may also prevent the information from being provided. Across all organizations, people report they want to receive more information than they send (Goldhaber et al. 1978, p. 82). Uncertainty seems to beget uncertainty.

Verbal and nonverbal communication. The third item on an administrator's information agenda should be to identify the various languages and messages most frequently contacted. This also includes learning the nonverbal cues most important to others. Messages must be constructed in the language appropriate for the receiver.

Little research is available on nonverbal communication in any organization (see Salem 1977). The impact of choosing a particular signal (speech, touch, writing, etc.) is seldom explored without reference to a method of communication such as small-group conferences, interviews, documentation schemes, or the telephone.

Language differences need investigation. In addition to the obvious jargon problems that develop within the academic subsystems of higher education systems, other language problems are likely to occur between academicians and staff and between organizational members and nonorganizational members. Every institution has its own language for everything from grades, course numbers, and academic titles to procedural shorthand and the titles of forms.

A particularly common problem is the tendency to use acronyms. Salem recently directed a graduate research project (unavailable as a manu-

script) investigating the extent to which regular faculty in a high school, students, and clients could accurately identify a full range of acronyms used by vocational education instructors. The results were depressing not only because of the low accuracy scores, but also because the subjects identified vocational education teachers as the subjects' principle source of information about these code items.

Most current textbooks on communication (see Knapp 1978; Burgoon and Saine 1978; Scheflen 1974) review the small amount of literature that investigates nonverbal elements in the organization. At the very least, we would expect administrators to be sensitive to studies of the communicative implications of space since space allocation and use are common areas for decision.

Methods of communication. The fourth item of the information agenda should be to assess the ability of existing methods of communication to provide needed information. If the needed information is not flowing adequately, the methods of exchanging the information must be improved by providing more resources or by training key personnel to upgrade their skills. If the method of communication needing correction is some type of documentation, *resource* refers to equipment or material, but when the defective method is some preplanned, face-to-face method or a collective decision system, the most important resource is time. The resources will, in the end, save time and energy because resources will not be needed later to correct failures created by a poor information flow.

There are some studies of the various communication methods used by academic personnel. Several of these studies explain the personal patterns of various administrative positions, and we have reserved this research for a later chapter. There are few studies that investigate general differences in communication methods between different roles in the academy.

Holsenbeck (1977) noted that universities tend to use more paper than other types of communication methods, and that colleges and universities tend to use more paper than other types of organizations. Even so, nearly 80 percent of a university employee's communicative behavior is oral, with telephone use and one-on-one talk accounting for nearly 70 percent (Goetzinger and Valentine 1962). The 1962 study also reported that most communication lasted five to 15 minutes with most telephone and written information taking less than five minutes to process. Most university communication is improvised.

This finding seems intuitively wrong unless an example is considered. Assume that a hard-working professor is using the morning (four hours) to prepare a manuscript and to prepare for an afternoon lecture. Furthermore, assume that the professor consulted eight sources in the course of the morning and produced both a portion of a manuscript and the complete lecture notes. These 10 communicative incidents (reading, eight, and writing, two) are just part of the entire day that includes conversations with colleagues and students, telephone calls, and the public presentation

of the lecture. In most cases, the 10 nonvocal communicative incidents can be matched by the materials in the professor's mailbox—memos and letters that probably take less than 15 minutes to review. The number of improvised events is simply so great that when the improvised are added to the planned, the 1962 study begins to make sense. The improvisation has little impact on some tasks (e.g., the professor's lecture), but will encourage confusion when a task requires the coordination of two or more members of the system.

This general reliance on improvised formats may account for some of the role ambiguity mentioned earlier. This reliance may also account for what some have called "shortness of the corporate memory." To store and to retrieve information reliably are two of the challenges faced by any administrator in any organization, and improvised communication is not a way of meeting that challenge.

Documentation serves two purposes. First, documents provide a more reliable method for storage and retrieval. Requiring information to come in a particular form assumes that an administrator has some idea of what can be discarded. No items on any form and no form should be created without assessing the need for the storage, retrieval, and general use of the information requested in the item or form. The next time you receive a form to complete (budget request form, schedule form, evaluation form), carefully check each item. Who needs this information? Why do they need to store it? How often will they retrieve it? How long will it be available in storage? A well-designed documentation scheme can provide an excellent method of storage and retrieval. If administrators evaluate the necessity for storage and retrieval before creating the form, a forest can be saved forever.

Documentation also provides for decisions in advance of execution (Galbraith 1977). Rules and procedures create uniformity and reduce the administrators' load by providing subordinates with a written decision as reference. Again, however, the extent to which this purpose is accomplished depends on the need to accomplish the purpose, in this case, the need for uniformity.

The success of any documentation scheme also depends on the content provided in the document. Farace, Monge, and Russell (1977) suggest that every policy or written document contain three types of information: (a) information describing current or recurring problems or difficulties; (b) the goals, objectives, rewards, or motivation for changing or reinforcing the situation; and (c) the method for accomplishing the desired outcomes—the implementation. Too often documents provide only (a) or (c). Seldom do documents provide (b). People may know what to do—(a)—or how to do it—(c)—but never know why to do it—(b).

The Operating Letter (OL) system at Southwest Texas State University is based on an excellent documentation scheme (see Babbidge and Dacus 1971; Shave 1974). Each OL begins with a description and purpose section, satisfying (a) and (b). The bulk of the letter focuses on (c), methods of operation across units in the university. Particular OLs that are disliked

on our campus are the OLs with poorly written purpose or description sections or ones that include excessive detail in the methods of operation section. A major effort is presently underway to correct these difficulties while maintaining appropriate levels of documentation.

A set of rules or procedures is created to ensure uniformity, but, too often, they endorse mediocrity. When a form calls for a particular piece of information, for example, it requires a person to provide only that information and nothing more. When a procedure requires that an office be cleaned a certain way, it calls for no other way. If people "work to the rule," information that does not fit in the space is not communicated, and new cleaning methods will not be tried. A policy or procedure defines only the minimum standard, and the minimum is very likely to become the norm. Although the documentation may have been intended to improve performance, rules and documents may reduce the level of performance (see Katz and Kahn 1978).

Written rules, procedures, and documents also act as a constraint on innovation. Someone who contemplates a change must also contemplate a change of paper; innovation usually results in alterations of paper. People are generally resistent to change because of the consequent work involved in altering paper.

There are also several problems inherent in any scheme involving nonvocal communication. Written material generally takes longer to process (writing or reading). Some extra energy is normally required just to deliver documents. The sender of a written message is at the mercy of the receiver for a response. There is the likelihood of poor timing. Less content can be communicated, and, in fact, some content can never be expressed in writing. The processing time, the ease of response, and the type of content that can be communicated may be combined in the term "richness." Documents are not a very "rich" format (Wofford, Gerloff, and Cummins 1977).

Preplanned communication, such as formal interviews and public presentations, overcomes some of these difficulties by providing some immediacy of feedback, and the potential for better timing and for wider contact. These methods require more energy than documentation simply because they require more planning. Although preplanned methods are similar to documentation in that they can be directed at a "class" of people, the advantage in preplanned methods is that they can also be formed for a specific person, class, or audience. This means that the actual people who fill the roles must be accounted for in the planning. One division of an eastern university, in fact, reported that they get more information from meetings than from memos (see Goldhaber and Rogers 1978, pp. 86–87).

In spite of the enormous potential for these preplanned, face-to-face methods of communicating, their success is spotty, and they are not used as often as they might be. One explanation is that planning requires personal energy—energy we are not accustomed to devoting to face-to-face communication or energy we do not have. Although an interview may

exchange more information, a telephone call seems so much easier. Reading a memo or report is even easier.

A second explanation for infrequent or inconsistent use of the preplanned, face-to-face methods is ignorance. If people do not know how to conduct an interview or to construct and execute a committee agenda they will be less likely to do so. If they do try, they will spend more personal energy and effort than if they were experienced. The techniques for employing preplanned, face-to-face methods are well known in many disciplines, and it is ironic to see poorly run committee meetings in an academic institution that offers classes in interviewing, conference planning, or business and professional speech communication.

Energy and skill are important considerations when contemplating collective decision methods of communication. The increased participation of group members and the overall diversity of opinions expressed in project groups or decision groups make collective decision building the richest method of communication. This approach demands the greatest personal effort and energy to ensure success since there is a geometric increase in the planning required and the number of relationships that must be taken into account. Consistently good performance in such a group also requires interpersonal and group communication skills that are the norm for academic administrators (see Goldhaber and Rogers 1978; Lockwood 1977).

Collective decision building is at one end of the continuum of the methods of communication. As one moves away from collective decision building toward the preplanned, face-to-face methods, less information will be exchanged, but less energy will be required. A similar pattern emerges as one moves from preplanned methods to documentation and from documentation to improvisation. Improving methods of communication, in other words, has its cost, and if the resultant increased information is not really needed the cost becomes waste.

Communication networks. The fifth item on an administrator's information agenda should be to assess the status of existing networks with respect to the institution's design and to augment current flows with additional reporting procedures or information sources and personnel to reinforce key links.

There has been, to our knowledge, only one thorough analysis of a communication network in an academic institution. This network analysis, of a medium-sized (1,400+ members, 16,000+ students) midwestern university, ("MU") was carried out as part of an organizational communication audit conducted by a research team that included one of the authors of this manuscript (Salem). Some results of the overall audit have been published (Goldhaber et al. 1978), but the significance of the network analysis itself has not been explained. The conclusions drawn from this university's network will be compared and contrasted with other data to give a more complete picture of the status of networks in higher education and the extent to which they carry information.

Academicians and those people who manage and perform ancillary services tend to receive more information in a university than do academic staff personnel such as secretaries or administrative assistants. This conclusion is supported by Holsenbeck (1977) and by the network at MU in which less than 10 percent of the entire organization could be classified as isolated from either the formal or informal network. Although staff personnel at MU had fewer network links than did line or academic portions of the university, they occupied nearly as many of the key liaison roles as the academicians. A dean's administrative assistant, for example, may not have as many relationships in the university as a faculty member, but the relationships that the assistant does have involve key and diverse personnel that may supply more information than could be garnered from the faculty member's relationships.

Secretaries are key staff positions. Goldhaber (1972) studied the communication of the top seven administrative offices at a southwestern university. Seventy percent of the students surveyed interacted with these offices during one week. Of this 70 percent, all of whom initially interacted with secretaries, 56 percent reported some negative interactions, with more than half the number (a little over 20 percent of the sample) not returning to the office. The most often reported reasons for the negative interaction were time delays and rudeness on the part of the secretary. In other words, nearly one-fifth of a student body did not receive needed information during their interaction with administrative secretaries.

Faculty were generally the most active network members at MU. In addition to their links within the university, faculty are, of course, the most active links between the university and students. The content of most student-teacher communication is not the university, however. It is more likely to consist of course-related or motivational topics. The purpose of class-related communication is not to link students to a university but rather to course material.

Nonclass-related communication is very often improvised at chance meetings on or off the campus, or it is likely to occur as part of the development of an interpersonal relationship. The frequency and scope of these improvised contacts have not been researched and may be difficult to measure accurately. The most common nonimprovised method for making these nonclass-related contacts is the use of office hours. Although the discussion may turn to class material, office interviews are more likely to focus on the student and provide the opportunity for a faculty member to connect the student to the university officially by providing university-related information. Goldhaber (1972) reported that faculty actually kept their "office hours" only about 30 percent of the time, which appears to be yet another example of a squandered opportunity to increase a flow of information.

Not only does the flow of information from university personnel to students fail to follow intended patterns, but also the flow within the university deviates from intended patterns. The organization chart of MU, for example, identified more than 60 departments and offices, with some

offices or administrative positions serving as links to ensure that information could flow from any one segment of the university to any other. When the members of MU were asked to identify their typical communication activity when performing their formal organizational roles, the resultant configuration (the actual formal network) was significantly different from the organizational structure suggested in the chart. Only 35 cliques—not the expected 60-plus cliques—emerged, and nearly half of these 35 cliques were not linked in any way to any other clique.

The academic portions of this formal network seem reasonable in spite of the apparent lack of predictability. In many cases, two or more academic departments joined to form one clique, challenging the departmentalization desired by the system's organization chart. From a purely information perspective, this finding meant that the flow of needed information required fewer cliques and, perhaps, that the information may be communicated as efficiently with fewer departments.

Earlier we suggested that colleges and universities may exhibit the most control over behaviors of individuals that provide ancillary services. The administrative and staff portions of the network should reflect this pattern. At MU there was a lack of clique development in these offices, some of them central to the functioning of a university. The network patterns in these offices were random. It was not that people in the admissions office, for example, did not talk to each other (although some did not), but rather that they talked more to university employees outside their office. Consequently, offices did not function as cohesive units, but rather as collections of talented individuals. If one of the people was replaced or was ill, the function they performed ceased. When was the last time you were told to call back because the person who normally does something was not there?

To understand how this behavior happens and how it differs from the behavior of academic units, consider for example, an accounting office employing 20 to 30 people. A small portion of these people are professional or degreed personnel whose initial training has been augmented by their own experiences with the accounting procedures unique to the institution. Their professional training and tenure at the university allow them to improvise if and when exceptional circumstances arise. The vast majority of personnel are, however, clerks with a limited educational background and a narrow view of their responsibilities encouraged by the division of labor within their own office. To simplify the tasks of these minimally trained personnel, they are often assigned to process only a few of the many forms sent to the office. Someone who telephones concerning a certain form must request the clerk who processes that form or wait through a series of "holds" until the particular employee is identified.

If the communication of the employees in this office is primarily with people outside their office, the opportunities to share their problems and knowledge with other members of their unit is limited to their informal contacts at breaks or lunches. When a clerk assigned to process particular forms is ill, the remaining clerks are unable to improvise because they

lack the professional training or knowledge of how the whole unit ought to function. The office works around the delay, a circumstance unappealing to the person whose activities have been delayed.

Such circumstances are less common in academic departments where the relatively similar training and broader view of faculty allows for more rapid substitution of departmental or academic roles (e.g., committee members, advisers, directors of programs or courses). When substitution is not possible, it is usually because the faculty member who filled a certain position did, in fact, spend more time communicating outside a department than within it. Nevertheless, the training and experience of faculty members can compensate for a lack of internal communication or a flood of communication from outside a department, and it is more likely that substitute faculty members will perform their responsibilities with fewer problems than will staff personnel in similar situations. Unfortunately, the problems in the staff or administrative offices are more likely to affect a greater proportion of the university.

A problem consistently reported in the research about information flows is the lack of information from the top level(s) of the university or college. The MU network helps explain part of the problem with these downward flows. Middle managers (deans, chairs, office heads, etc.) tended to use the formal network more than the informal, and the nature of this network was such that if one or two staff people were missing, the information never reached its destination.

Schorzmann (1978) found that member perceptions of reporting lines in a community college did, in fact, correspond to the intended links. The MU network tends to confirm this general knowledge of horizontal and upward lines. Lockwood (1977) reported a need for a more systematic method of upward communication about topics that could be regarded as human and policy content. Except for the reliance on key individuals (also noted by Schorzmann), task information seems to follow the desired paths; an increase in the amount of human and policy information seems to require a recognizable path upward to encourage sending.

Organization members will obtain the information they need one way or another. If the formal network will not provide the needed information, then the informal network will (Rogers and Agarwala-Rogers 1976). Covitch et al. (1974) noted the importance of informal networks in academia. The informal network at MU was more active than the formal and exhibited greater complexity and coordination. In all the studies noted in this network section, the grapevine was recognized as a key factor. The problem with its use is distortion, as will be explained in the section following.

The limited research explaining the communication networks in higher education may be summarized as follows:

- The communication networks in colleges and universities exhibit an improvised communication pattern. The informal networks are better controlled by social and cultural rules than the formal networks are controlled by organizational rules.

- Academic units tend not to reflect departmentalization in their communicative behavior.
- Institutions tend to rely heavily on key personnel, especially talented individuals in key staff positions.
- Although it may be difficult to evaluate the net impact of these trends in academic units, ancillary services will suffer if the information flow is not well planned and coordinated.

The Quality of Information

Timeliness. Processing time may be reduced by directing information at a key group of people, and sequencing difficulties may be overcome by proper planning. This is the sixth item on an administrator's information agenda.

Sometimes the needed information does arrive, but it may not have been processed with speed and accuracy. The quality may be so bad that the data cease to be information and may become, in fact, useless redundancy or noise.

Timeliness may refer (1) to the time it takes to process information or (2) to the inability of information to arrive at the time in which it can be useful. This first use has been called *duration* by Wofford, Gerloff, and Cummins (1977) and simply *processing time* by Miller. One variant of duration is *lag* (Miller 1978), i.e., the time required to act once information is processed. *Turnaround time*, the time required to respond, is a form of lag. A consistent complaint across all studies on organizational communication in higher education is a lack of follow-up or responsiveness (see Goldhaber and Rogers 1978).

Sequencing refers to the timing factors that exist between the reception of a message and other important events in the communication situation (Woffold, Gerloff, and Cummins 1977). MU members reported problems in various aspects of processing time and also in information arriving late. Late information is a problem of sequencing.

Some of the principles already presented apply to timeliness. Planned methods of communication that allow for some feedback, "a give and take," will improve chances for timeliness. A coordinated communication network with several cliques connected by well-placed liaisons not only ensures that needed information is received, but also that it is received in time. Often timeliness problems and uncertainty problems are solved simultaneously.

If all this is known, why is there a timeliness problem? The problem is inherent to improvised communication. And since communication in higher education is improvised, is it any wonder there is a sequencing problem? Those key liaison personnel noted earlier become bottlenecks when they are absent or overloaded. There are no natural connections between some cliques, which was true with half the cliques at MU. These personal links are more important than public communication or mass media.

The use of documents or mass media alone is not sufficient for effective diffusion. A two-step process is necessary for this to happen (see Lin 1973). An initial awareness of some potentially informative data may be created by mass media, for example, but it is the personal contact with an opinion leader or key information source that confirms the information in the earlier communication (Agarwala-Rogers et al. 1977).

What do college basketball fans talk about immediately after the game? The game, of course. They compare stories to confirm that others saw or experienced what they experienced even though they know their audience may have been sitting in the adjacent seats. They are really not confirming each others' experiences, but each others' reports of the experience. The talk about the event becomes the event itself. The postgame dialogue is, initially, a rehearsal of reality. Everyone will get the stories straight.

What do faculty do when they receive written notice of a general change of policy? They talk to other faculty about the black-and-white expression of the policy. The significance of the document is never really resolved unless there is an immediate consensus about the document's meaning or unless the confused parties appeal to an authority to clarify any misunderstandings. They contact opinion leaders if the opinion leaders are not immediately available.

The general pattern is demonstrated by the research of Agarwala-Rogers and her colleagues (1977). They investigated the way in which information about computer-assisted/dependent educational innovations was diffused among university professors. An initial pool of professors was informed about a battery of such innovations. Then the subsequent request for further information and the communicative history of those professors who adopted one or more innovations were used to construct a diffusion network. The network displayed the flow to initial information receivers and requestors, onward to secondary receivers who communicated with these intial receivers, and finally to the tertiary receivers who had learned about the innovation from secondary sources.

The secondary sources, influenced by mass media and the interpersonal contact with initial sources, actually received the most information. The actual adoption of one or more innovations was greatest among secondary receivers and tertiary receivers (the two-step flow), and the adoption was more likely when a potential adopter could visit someone who had already done so, an opinion leader on the innovation. The researchers concluded that one of the main approaches to innovation in higher education is to launch an innovation with a critical mass of individuals who then spread it interpersonally among their peers.

The importance of these key liaison personnel in improvised social networks is generally recognized by anthropologists (see Rogers and Kincaid 1981). The importance of these roles as part of the total system in a community college was noted by Schorzmann (1978). Diffusion through any system depends on the network through which information must flow. Directing the information at key sources will reduce the time required for the information to reach all the intended receivers.

Timely diffusion of information assumes that the sender has some knowledge of the sequence of events and of the times that are most valuable for the information to be received. Planning is a prerequisite to effective sequencing. The improvised nature of the information flow in higher education suggests that such planning is not the norm. Administrators do not plan their diffusion well.

Several planning devices are available to an administrator, and decision making and implementation schemes are discussed in a later chapter. One planning device, PERT, is most sensitive to the idea of time because it analyzes all behavior as a finite sequence of activities leading to a desired outcome (Phillips 1973). Such an approach is appropriate for planning routine flows.

Distortion. The seventh item on an administrator's information agenda should be to plan the periodic use of one or more of the checks on distortion. Implementation requires planning. Reducing distortion, however, will also increase load.

Noise involves errors that result from unintended message alterations. Distortion refers to intended or unintended errors produced from intended message alterations. Distortion is the result of a conscious act, normally not malicious, that alters information. Four general types of distortion can be described: gatekeeping, supplementing, summarizing, and assimilating.

Gatekeeping is distorting a message by simply dropping elements of the message, i.e., withholding some information. Supplementing occurs when additional information is provided. Summarizing is the tendency to highlight only those elements of information that a member feels are important. Assimilating occurs when the information is modified to conform to the needs of the reproducer of the information (see Allport and Postman 1947). Although distortion may be deceptive, distortion is not deception, as a closer examination of the organizational conditions contributing to these behaviors will show.

The information received by an organization member may not meet the need of the member, so the member will "read between the lines." Reproduction of the message may then involve supplementing or summarizing to assist the next receiver of the message. The uncertainty has been absorbed, resulting in a distorted rebroadcast.

Some research suggests that supplementing or assimilating may occur because of the limited availability or the poor quality (Housel 1976). In an attempt to capitalize on the limited opportunities, a person may relay a message that contains more information than is needed or may attempt to twist the message to advantage. Poor quality leads to worse quality. Uncertainty and ambiguity can lead to distortion.

Sussman and Krivonos (1979) summarized research about relational variables that affect distortion. Personnel who are ambitious or upwardly mobile will tend to distort more than those who are not. A lack of trust will increase the likelihood for distortion, and potentially threatening or

unfavorable content will tend to be distorted. The interests and goals of the communicators, therefore, will affect the probabilities for distortion.

The number of people involved in the sequential reproduction of a message will also affect distortion. This activity, which suggests a network, is called serial communication (see Pace and Hegstrom 1977). Gatekeeping normally occurs first, with members dropping various elements of the message. Details are then lost as the information is summarized. Although supplementing and assimilating may occur at any time (they appear to be more the product of the members' interests), the opportunity for these types of distortion appears greater at the end of the chain. At this point, the fewer words and topics (due to the summarizing) and lack of detail (due to summarizing and gatekeeping) invite supplementing and assimilation.

Conboy (1976, p. 27) discovered that only 20 percent of the information sent downward in a seven-tiered hierarchy was received accurately. Redding (1967) concluded: "The higher one goes in the hierarchy, the more must decisions be based upon less and less detailed information of the 'life-facts.'" Accuracy is, therefore, a problem in the formal network, and, as the number of people involved in the serial process increases, distortion should also increase. This condition is not true of the informal network, however.

Informal relationships are based not on organizational roles, but on social roles (e.g., friends). The informal network is often called the grapevine (Davis 1953, 1973). The grapevine is fast and it carries much information. A person's involvement and role in a network are determined more by the nature of the information being carried than by the person.

Although grapevine information may lack some important detail, it is from 75 to 90 percent accurate (see Davis 1973). Its accuracy may be accounted for partially by the grapevine's tendency to form a cluster pattern, with pockets of individuals confirming reports before reproducing them. This cluster pattern gives the informal network its grapevine appearance.

The negative aspect of the grapevine is that it carries rumors. Davis defines rumors as information communicated without secure standards of evidence being present; someone receives and reproduces information without asking the source, "How do you know this is true?" Since rumors may be, by definition, ambiguous or uncertain, they are more likely to be distorted.

Rogers and Agarwala-Rogers (1976) suggest three general approaches to dealing with distortion: repetition, verification, and bypassing. Repetition means sending a message in different forms over different net paths in different formats over time. Verification means ensuring the accuracy of a previous message, checking the accuracy of the message when you receive it, and/or checking the perceptions of your receivers. Bypassing is any method that sidesteps intermediate connections in a transmission, i.e., going right to the top. Specific activities that conform to these general types are provided by Pace and Boren (1973, p. 356).

Overload

Overload is a condition of input exceeding output capacity. Any adjustment process must either reduce the input or increase the capacity. The last item on the administrator's information agenda should be to identify potential overload problems and adopt the appropriate response.

When the amount of information to be processed exceeds the capacity of an organism to process it overload occurs. There is so much information that it exceeds a person's capacity to speak, write, read, or listen. If the condition persists, the resultant stress may lead to a total breakdown or even death (see Miller 1978).

There are two general approaches to coping with overload. One approach is to prevent the excess information from actually reaching a person. One can, for example, avoid the stress through coffee breaks, vacations, or sabbaticals. Simply omitting converted information is another method. The need for the extra information can be reduced by lowering performance standards and accepting poorer quality work. These methods of reducing the amount of information that needs to be processed compromise efficiency for volume. But they are generally easy to accomplish.

Queuing is a method of reducing the information flow that requires insight and energy. It involves letting information build up, taking communication one at a time, until some slack time is available to complete what was delayed. Waiting lines and the pile of papers on a desk are an example of queuing. It is a good method for coping with overload as long as any timeliness problems can be anticipated. Queuing can be effective if it can be planned.

Filtering is the method traditionally used to cope with overload across a system. It means giving priority or assignment to certain message types and processing only those messages. It means creating standards or rules that direct only certain messages to certain places as others messages are filtered off to others or omitted. Developing a hierarchy of authority, narrowing the span of control, enforcing rules and procedures, or simply making plans and setting goals are devices traditionally employed to handle load (Galbraith 1977).

Any method of coping with overload by reducing or limiting the actual information being processed may lead to the discovery that certain pieces of information are not really necessary. On the other hand, any of these methods risks losing key information needed to accomplish a task. When the potential for losing needed information cannot be avoided, a second approach is needed.

The second approach to coping with overload is to increase the information processing capacity of an individual. Sometimes this means training people to improve their ability to speak, write, read, or listen, or simply to improve their ability to organize and plan their communication. Increasingly, capacities are improved by supplying equipment such as word processors, computers, etc. The traditional method of improving capacity is to hire more people (e.g., an assistant or aide). A most important nontraditional approach is to involve multiple-channels.

To use multiple-channels (a term from Miller 1978) means to require more than one person or organizational unit at the same level in a hierarchy to process information, thus reducing the load to any one person or unit. Creating self-contained units is one way to accomplish this task. A multicampus college or university creates self-contained units when it decentralizes some of its decision making or when satellite administrative offices are installed at each campus.

Multichannel use may involve the creation of lateral relations between units. This may be done by simply providing a link between managers who share a problem or by creating task forces to solve problems that affect many departments. More permanent adjustments include the creation of an integrating role (e.g., ombudsman) or the change of the organization's structure to project or matrix designs (see Galbraith 1977).

The irony of the methods for coping with overload is that adopting any of these choices increases the likelihood of distortion. The adjustment process will either increase the uncertainty in messages or increase the number of people involved in transmission. Simultaneously avoiding uncertainty, poor timing, distortion, and overload requires planning.

The Value of Information

Information may be satisfying because of the intrinsic worth of discovery and of recognizing and gaining knowledge. Information may satisfy or assist in satisfying some extrinsic desire such as completing a task. Some have investigated the idea of communication satisfaction (see Lin 1973), but there has been no systematic investigation of the value of information.

Uncertainty appears to be undesirable because of the likelihood of role ambiguity or role conflict. Some positions, however, thrive on ambiguity (Galbraith 1977). College teaching may be one such profession, rejecting the extrinsic value of information provided by others for the intrinsic worth of self-discovery. On the other hand, an admissions worker rejects the intrinsic value attached to a personal search of each student's history and desires only the portions of a student's history (presented in a prescribed form) necessary to admit the student.

The material presented in this monograph may lead you to correct uncertainty, timeliness, distortion, or overload and so assist you in accomplishing your task; the monograph may have an extrinsic value. It may be interesting and pique your curiosity to the extent that you may pursue your own research; it will have an intrinsic value. We want it, of course, both ways. The administrator also should want information to satisfy both desires. Behavior that is both extrinsically and intrinsically valuable will be the most motivating (see Herzberg 1966).

Research on the relationship between uncertainty and extrinsic satisfaction does not suggest a linear relationship (see Schaefer 1981); more information is not necessarily better. The relationship appears to be curvilinear. At a certain point, information ceases to be satisfying, and, in fact, an increase in the amount of information is dissatisfying. People can know too much. This curvilinearity has already been investigated in in-

terpersonal relationships (Gilbert 1976) and has been suggested as an organizational communication law of marginal returns (Tubbs and Moss 1980).

Not only must administrators assess information needs, but they must also determine the information desires of their potential receivers. These desires are not inherent in the organizational roles or the explicit role relationships established as part of the organizational structure. The desires vary from individual to individual. To determine the information desires of people in the system, the administrator needs personal information from the people involved (see Miller and Steinberg 1975). If information satisfaction is the goal, the administrator must be willing to communicate interpersonally to ascertain how much information is desired and the point of diminishing returns.

The Conservation of Information

The transfer of complexity. Any living system exists only at the behest of its environment. Systems, in fact, have an interest in maintaining their environment since their environment provides the inputs it needs to survive. In turn, the environment is interested in maintaining systems that serve its purpose, and so any particular system will find a method of adaptation that reflects its environment. Systems are refractions of their environment (see Weinberg and Weinberg 1979).

Human systems survive in and mirror their information environments (see Emery and Trist 1965). When data are of a given complexity (i.e., when there is a given amount of information), the system will perform activities that reflect that complexity. The processing of a great amount of information requires behavior more complex than the behavior needed to process a small amount of information.

How this happens may be explained by the use of a mnemonic device. Information occurs when uncertainty is reduced, when the complex is made simple. Objectively this means that a complex pattern of events is reduced to a simple pattern (see Miller 1978). Perceptually, information occurs when a person recognizes a pattern (Farace, Monge, and Russell 1977). That is, what was formerly thought of as being random is recognized as having some meaningful pattern. The pattern is taken in. The form is taken in. One is in-formed.

The initial recognition of a particularly complex form normally requires considerable energy. A system normally attempts to process the form by searching for the right combination of behavior that will unlock the mystery, much as a naive student searches in a hit-or-miss fashion for a way to understand a new academic subject. Once the form is recognized, however, the system will have identified the particular pattern of behavior needed to recognize the new form. The pattern of behavior will be as complex as the form that was recognized.

Therefore, the complexity of a message is evidenced in the complexity of the behavior used to communicate it. This notion is suggested from the works of Weick (1969) and Weinberg and Weinberg (1979) who noted the

parallel nature of the environments and the systems that survive in them. What this finding implies is that complexity is not reduced as information is processed; complexity is transferred. Information is conserved in behavior.

This tendency to conserve information in behavior is supported by two recent studies. Bodensteiner (1970) demonstrated that as the level of uncertainty increased, organizations tended to use more complex communication (verbal rather than nonverbal, vocal rather than nonvocal). The amount of face-to-face interaction and the frequency of telephone use increased as uncertainty increased. He did not employ Johnson's typology, and so it is difficult to define these methods as either improvised or planned. Nevertheless, during the periods of uncertainty the organization increased its use of methods for complex messages.

Connolly (1975) was concerned with communication patterns in general as opposed to Bodensteiner who investigated specific instances. Connolly also used a measure of perceived uncertainty to confirm that two types of research departments were in two different information environments (see Emery and Trist 1965). The departments in the more uncertain environment had more complex communication networks. That is, the departments with the greater amount of information to process had the more complex information-processing behavior.

Universities in a relatively stable environment, therefore, will need to supply little task information and will employ improvised communication methods in a simple network. As the environment becomes more complex and information demands increase, the university will adopt a bureaucratic structure. The amount of task-related information in a documented form will increase, but in a relatively simple, downwardly dominated network. Further organizational development will require preplanned or group-decision communication methods disseminating task, human, and policy information in complex networks reflecting more complex organizational structures.

These natural developments can, however, be altered by an administrator. Organizations are contrived, and the decisions that are a part of the contrivance determine the actual structure of the organization. The choice of organizational structure must take into account the information demands of the system.

Organizational structures. If an organizational structure is too simple and the information demands are great, or if the structure is complex and the information demands are low, the mismatch could generate the problems of uncertainty, information quality, and overload to such an extent that the very life of the organization will be in jeopardy.

The traditional bureaucratic structure is employed by most academic institutions, and several of the problems already identified can be traced to improvising rather than actually following that bureaucratic form and moving to documentation and preplanned methods of communication. Bureaucracy fails, however, when information needs are great. Some in-

stitutions have evolved to a project structure to supplement the bureaucracy. Members of the organization from several different units may be pulled together, bypassing traditional authority structures for the duration of a project such as a major freshman orientation effort, a research study, or an institutional advancement effort.

The most flexible organizational design, the one capable of processing the most information but requiring the most planned communication, is the matrix design. A matrix design is a method of accounting for both the differences between projects or sites while, at the same time, maintaining uniformity of behavior across critical functions. The problem faced by most organizations moving to this type of structure is recognizing the unique aspects of projects. However, the problem associated with academic institutions is recognizing the need for uniformity. In a business, labor is divided by reducing complex tasks into a sequence of simple ones that are tied together to produce a product or service. In academia the educational functions are seldom divided, and organizational units, such as departments and schools, serve as parallel units performing the same tasks but in different disciplines.

Although project structures may emerge in academia, the use of a matrix design is unlikely. Such a design requires two types of managers: functional managers and project managers. The academic portions of higher education are dominated by project-type administrators (deans, chairpersons, etc.) As Meyer (1975) pointed out, colleges and universities do not directly control the actual educational behaviors such as teaching. A functional manager is created when uniformity of a behavior is desired across projects (see Kingdon 1973), and teaching, conducting research, and performing services all are behaviors that resist uniformity.

A matrix design for an institution of higher education might require the configuration shown in Figure 2. Such a situation requires dual reporting lines and risks an increase in conflict necessitating more collective decision making. Even if a university administrator were willing to risk such an approach, it is unlikely that teachers would commit themselves, preferring to remain professionals partially involved in the task of education and not in its administration.

The administration of ancillary services appears to be too simple a task to require such a complex structure and the rich communicative behavior that is its consequence. One can hardly envision an admissions or personnel unit needing such a structure.

We do not want to leave the impression that these difficulties prohibit the use of matrix designs in higher education. Several institutions employ such structures, but they refer to them as "cluster systems." The success of these systems depends very much on the environmental circumstances. In periods of growth and decay, the advantages of such systems appear to outweigh the disadvantages. The reverse seems true in period of stable enrollments and economic conditions. There is no literature about these designs in higher education, but the continued success of some institutions should produce a more enlightened basis for evaluation.

Figure 2: Configuration for a Matrix Design

		Academic Departments (Projects)			
		Mathematics	Philosophy	Economics	Others
Educational Offices	Academic Foundations				
	Undergraduate Education				
	Graduate Studies				
	Community Services				
	Professional Services				
	Public Service				
	Grants and Contracts				
	Social Research				
	Others				

The administrator should choose, therefore, responses appropriate to the level of complexity in the information to be processed. Documentation or improvised networks will not meet a great demand for information, major diffusion efforts will not improve the dissemination of simple data, multiple approaches must be employed to correct the distortion of complex information, and queuing will not significantly reduce the load of nonroutine information. Matching behaviors with information is the key.

Climate

Background

In any organization, one key indicator of the health of the communication environment is the organizational climate. The concept of organizational climate has been used to characterize an emergent dimension of a complex organization. Certainly, all of us are familiar with differences in the general feeling we experience in different organizations, and we often recognize the impact this general impression has on our attitudes about and behavior in a given organization. An individual who moves from one academic institution to another frequently finds the differences in the general climate of the two institutions more striking than specific differences in policies and procedures.

The concept of organizational climate has been treated in a wide variety of ways by previous investigators. Historically, three major approaches to organizational climate have been employed: the perceptual approach, the objective approach, and the process approach.

> *The perceptual approach has suggested that the climate depends on how the individual member perceives his or her environment and, as such, each member is likely to possess a unique set of responses to the climate. In the objective approach, the individual's response to climate is a product of the aspects of the organizational elements. . . . The process approach suggested that the individual's response to climate is a function of which aspects of the organization's elements are most relevant to him or her and how these were communicated (Sanford, Hunt, and Bracy 1976, pp. 217–18).*

These same authors attempted to provide a further description of organizational climate and suggested that four major dimensions of organizational climate can be identified: (1) structure, rules, control; (2) responsibility, challenge; (3) risk, risk-taking, tolerance; and (4) support, warmth, consideration (Sanford, Hunt, and Bracey 1976). A factor analytic study of work climates conducted in a noneducational setting found six major factors associated with organizational climates: (1) conflict and ambiguity; (2) job challenge, importance, and variety; (3) leader facilitation and support; (4) work-group cooperation; (5) professional and organizational esprit; and (6) job standards (Gunderson 1978, in King, Streufert, and Fiedler 1978).

Organizational climate may be examined as either an antecedent or a consequence of communication in the organization, and changes in the quality of communication in the organization and variations in the organizational climate go hand in hand. The analysis in this chapter will focus on selected elements of organizational climate that have a particular impact on organizational communication and that have been the subject of previous investigations in educational settings.

Antecedents of Organizational Climate

Communicative style. Several early investigators used various dimensions

of personal style as mechanisms for explaining individual behavioral patterns. The early study of authoritarianism (Adorno et al. 1950), Rokeach's (1960) examination of dogmatism and of the tendency for individuals to employ an open or a closed strategy in dealing with new ideas and beliefs, and Christie and Geis's (1970) study of Machiavellianism (the tendency to be manipulative in interpersonal relationships) are all examples of this approach. Some authorities have suggested that one key antecedent of organizational climate is a relatively stable set of environmental characteristics related to the leadership behavior of those in central positions in the organization. "The effect of this impact of the leadership behavior at the top and upper levels of an organization upon all levels of that organization is now being referred to as *organizational climate*" (Likert and Likert 1976, p. 102, emphasis in the original).

The organizational climate as produced through the leadership behavior of those at higher levels serves as a significant constraining force in determining the kinds of attitudes and behaviors individuals feel free to employ in an organization. The ability to influence the organizational climate in meaningful ways declines at each lower level of the hierarchy. Hence, as progressively lower levels of the organization are considered, the more likely it becomes that two distinct perspectives of the organization will exist; one related to the immediate work group and a second related to the larger organization (Likert and Likert 1976). The differing perceptions concerning the efficacy of an academic system were confirmed in a study of a Florida community college. In that study of an institution employing a traditional, bureaucratic organizational model, perceptions held by top administrators concerning the interaction, decision making, and communication in the college were significantly more positive than those held by other administrators or by faculty (Weaver 1977, p. 81).

One familiar description of organizational climate has focused on supportiveness in organizations. Gibb (1961) distinguished between defensive and supportive climates in small groups, arguing for the importance of a supportive climate. Likert (1961, 1967) described the importance of supportive behavior on the part of superiors and contended that successful supervisors were perceived by their subordinates as both setting high goals and behaving in a supporting manner.

The relationship between organizational climate and communication style in higher education is clearly demonstrated in a study of administrative management styles in 49 institutions (Astin and Scherrei 1980). Many of the major distinctions among the four presidential styles identified (bureaucrat, intellectual, egalitarian, and counselor) were characterized by significant differences in several of the communication behaviors exhibited, such as frequency of interaction with various individuals and groups and the contexts in which these contacts took place. A brief summary of the four major presidential styles described in this study should illustrate the impact of communicative style: (1) A bureaucratic presidential style involved frequent direct communication with other top administrators, particularly the chief academic and fiscal officers, and indirect

contacts with others through staff. This style led to perceptions by faculty and other administrators that the president was remote, not open, and relatively inefficient and ineffective. (2) The intellectual presidential style included frequent communication with faculty and with academic administrators such as provosts, deans, and assistant deans, but less frequent interactions with some internal support officers (such as the registrar) and with potential external donors. This style resulted in faculty perceptions of an intellectual president. (3) The egalitarian presidential style included a broad range of communicative contacts with a diverse group of individuals within the university, including many internal support officers (such as the financial aid officer and the registrar) who were seen much less frequently by those employing other styles. The most dominant perception resulting from this style was that of a nonauthoritarian president. (4) A counselor presidential style involved greater reliance on informal meetings and personal conversations as well as a tendency not to rely on external consultants. This last presidential style was associated with older presidents who had been at their institutions longer than others and who were perceived as good entrepreneurs or fund raisers.

High factor loadings between a bureaucratic presidential style and hierarchical administrations and between an egalitarian presidential style and humanistic administrations support the notion of the centrality of leadership behavior of highly placed individuals to organizational climate. Moreover, the relatively lower satisfaction levels of administrators in hierarchical administrations and of faculty under a bureaucratic presidential style, coupled with higher administrator satisfaction levels in humanistic systems and higher levels of faculty satisfaction under an egalitarian style, confirm the importance of the organizational climate and presidential style on faculty and administrative satisfaction (Astin and Scherrei 1980).

Other authors have also commented on the general problems associated with a bureaucratic model and have commented on the impact of this approach on certain dimensions related to an organization's communication climate:

> *The main flaw in the bureaucratic model is that when applied (and it still is widespread in organizations of all types), it often does not work very well. One main reason for this is that human needs—especially social, psychological and self-actualization needs—are not adequately fulfilled. Another reason is that the bureaucratic model creates serious informational problems. On the other hand, there are still many situations where a relatively bureaucratic or authoritarian approach is called for and does work better than other approaches. These include situations in which human need fulfillment does not suffer very seriously, where routine and preprogrammed decisions are involved, where standardization is appropriate, where a quick decision is clearly needed, and particularly where the organization or a given part of it functions in a stable environment and is not confronted with very significant uncertainty (Richman and Farmer 1976, p. 29).*

Obviously, the stable environment with little uncertainty described above does not very accurately describe the system we know as a college or a university. We would be well advised to remember that although a bureaucratic model provides a structure that is more fully documented than the improvised one common in many colleges and universities, the structure is not necessarily planned in relation to a complex environment and certainly lacks the sophistication and sensitivity of either a project management or a matrix system.

The impact of the president's style may have major consequences for the institution as a whole, particularly by defining how free others feel to employ their own preferred communication styles. However, every individual in the organization helps to shape the character of the relationships in that organization through his or her personal communication style. In a discussion of a communication audit conducted in a section of a large southwestern university, Goldhaber and Rogers commented on secretaries who acted as buffers for their bosses by referring misdirected questions to more appropriate authorities in the institution. They contrasted this legitimate secretarial job function with an alternative situation, noting:

> *when the secretary becomes overprotective of the administrator, continually rebuffs student visitors, addresses students bluntly or in a condescending manner, or makes it almost impossible for the student to gain entrance to the administrator, then the secretary has become a "barrier" to communication (1978, p. 80).*

In this institution, the situation was serious enough that the communication auditors ultimately made the following recommendation:

> *Secretaries who are barriers to communication between students and administrators should be replaced by courteous, sensitive individuals who enjoy interacting with people (especially with students) or transferred to offices where their responsibilities do not require them to interact frequently with students. They could also be retrained by participating in communication or sensitivity training sessions designed to improve their interaction with people. For example, they might be shown videotaped role-playing scenes of student-secretary interactions; discussions would follow the role playing (p. 83).*

Thus, throughout each college or university, the climate is profoundly influenced not only by the communicative styles of those in central positions, but also by the communicative behaviors of others who reflect the character of the institution. Presidents who employ a bureaucratic personal style and who impose a hierarchical administrative structure should probably anticipate a communication climate characterized by lower satisfaction levels among other administrators and faculty members. Those employing a more egalitarian personal style and a more humanistic structure may generally expect greater satisfaction among other administrators

and faculty. Although the research on this topic was conducted with presidents, a similar pattern might be expected at other levels of academic administration. However, the specific relationship between personal communicative style and other components of organizational climate at other levels of academic administration remains open to investigation.

Throughout the organization, questions about the personal communicative styles of employees and the communication demands of particular jobs deserve careful attention. Special attention should be given to the personal communication styles of individuals whose jobs will require them to act as liaisons, performing important linking functions between the organization and individual. In some cases job placement decisions may be used to improve the organization's communication climate. In other situations special communication training for new employees may be required.

Organizational complexity. Another factor that influences the communication climate of a college or university is the complexity of the organization. Colleges and universities differ greatly in their degrees of diversity, differentiation, and complexity. With a range of institutions varying from extremely small, single-focus (often teaching-oriented) colleges to very large multipurpose universities with well-developed teaching, research, and service components, organizational complexity interacts with other dimensions to influence the communication climate.

Organizational complexity is often an internally imposed condition, and the tendency of colleges and universities to centralize authority and decision-making functions has been apparent for several years. Increasing financial pressures, accelerating public demands for accountability, and the necessity of being involved much more directly with external systems that are already bureaucratized (such as the federal government) have all helped to promote this tendency. However, this centralization is not without its impact on the organizational climate and on communication in the organization:

> *The trend toward increased centralization is often excessive, unwarranted, unwise, and dysfunctional to the goals, priorities, and viability of the institution. Excessive centralization leads not only to the loss of power and autonomy for middle management, but also far too frequently to slower and poorer decisions, faulty communications, and much information-clogging and distortion. This stems from not utilizing a contingency approach based on an adequate assessment of salient conditions and of the results desired. (Richman and Farmer 1976, p. 247).*

Certainly, the kinds of consequences concerning communication described above must take their toll on the organizational climate. Although the need for careful coordination of a large number of functions within a college or university is apparent, when centralization is equated with coordination, the organization's communication climate may suffer.

Finkin (1981) has commented on the potential impact that collective bargaining can have on an academic institution's climate, particularly by increasing the number of formal internal constraints. He noted that the relatively general guidelines used to operate academic institutions under the assumption that disagreements would be resolved in a manner sensitive to faculty interests may be replaced by an increased level of adjudication and arbitration based on the assumption that nothing is binding if it has not been stated in the collective agreement. He suggests that this increasingly precise definition of faculty roles and an accompanying tendency to litigate that role can lead to an excessive emphasis on internal detail (p. 78). This kind of situation would certainly change the internal communication climate within the organization, increasing the emphasis on the development of communication rules and much more formalized role descriptions.

Darkenwald (1971) categorized institutions according to their degree of differentiation and studied the impact of differentiation on the degree of conflict between academic departments (and their chairpersons) and central administrative subsystems on matters affecting departments. He found:

> *a curvilinear relationship between conflict and organizational differentiation in colleges and universities. . . . With increasing levels of institutional differentiation—and, concomitantly, professionalization—conflict increases up to the point at which universities begin to take on the attributes of full-fledged professional organizations. At this stage, conflict begins to diminish. When either the professional or the administrative authority structure is dominant, internal conflict tends to be relatively low. When there is no clear subordination of one to the other, a struggle for power ensues and conflict is exacerbated (p. 411).*

The pattern described above would appear to have some consequences for the communication climate of a college or university. The potential for increased levels of conflict between academic departments and central administrative subsystems in these medium-differentiated institutions seems clear, and the expectation of a different set of key issues in departments, with some relationship to the degree of institutional differentiation, also seems probable. An institutional communication agenda with significant emphasis on conflict among subsystems and on the distribution of power could be expected in these institutions. Academic administrators in these medium-differentiated institutions would be well-advised to pay particular attention to the communication agendas in their institutions. If a consensus has not been attained on whether the administrative or the professional subsystem has primary authority, many apparent disagreements over specific issues may actually be manifestations of disputes over the distribution of power. These kinds of conflicts will probably be more common in medium-differentiated institutions than in institutions that are either high or low in institutional differentiation. Administrators in

these situations may be amazed when apparently elegant solutions, implemented without appropriate attention to the hidden agenda question about the distribution of power, lead to resistance or opposition instead of the support that was anticipated.

Consequences of Organizational Climate

Performance. Earlier, we suggested that an organization's communication climate makes a difference—that a supportive, open climate is more beneficial than a restrictive climate. However, the specific benefits of a more open climate are by no means clear. Bass and Rosenstein (in King, Streufert, and Fiedler 1978) noted in a discussion particularly related to participative management that this style "has been expected to increase satisfaction, involvement and commitment as well as to improve performance. However, it has been easier to show the effects on attitudes and feelings than on performance" (p. 4). In one study of deans and department heads at three New England land-grant universities, Baccus (1978) found no relationship between perceived organizational climate and achievement motivation. Investigators in an industrial setting have commented on the impact of self-fulfilling prophecies on the development of younger members of the organization. They have labeled the critical role that supervisory expectations can play in establishing a positive climate for the performance of their subordinates "Pygmalion in Management" (see, for example, Livingston 1979). However, the impact of an administrator's expectations in developing a climate that encourages positive performance expectations for newer members of the organization in an academic setting appears to deserve further study. The effects of climate on productivity in colleges and universities also represents a neglected area of research. Perhaps the difficulty of operationalizing "productivity" in this context is partly to blame, but whatever the reason, the relationship between organizational communication climate and productivity in academia is, at this point, largely a matter for speculation.

Integration into the organization. A positive organizational climate might help individuals become more effectively integrated into their environment. This process of integration is particularly important for new members, but it also helps continuing members to maintain organizational identification. An organization uses communication between superiors and new subordinates as well as messages from higher levels to acquaint new members with the organization. The purpose is to develop in the new members a change in perspective so they will better identify with the goals and objectives of the organization. Perhaps the clearest evidence that this change in perspective has taken place would be a transition in the new member's interest from what "they" are doing to what "we" are doing. The area of organizational climate and integration of individuals into their environment in colleges and universities has received some research attention.

In an intriguing approach, Place and Sorensen (1974) surveyed 88 for-

mer faculty members to review turnover in light of perceived influence patterns. Although they found that the upward influence exercised by department chairpersons was related to former faculty's perceptions of and feelings about the institution, they were surprised to discover little relationship between the existence of collegial relationships and faculty morale. Instead, morale was more closely related to the strength of a chairperson's external relationships, i.e., the chairperson's effectiveness in obtaining desired resources from his or her dean. Another study concluded that faculty attitudes toward morale varied directly with their perceptions of the level of faculty involvement in policy formulation as well as with several demographic variables (Wells 1976).

When seven California community college campuses were examined from the perspective of Likert's profile of a college, several differences in the perceived climates were observed. Evidence of differences in the way the organizational climate was perceived was reflected in the fact that presidents believed more goal commitment existed than did vice presidents. Also, those in higher positions were more likely to believe that the organization was operating at a "System 4" level, described by Likert and Likert (1976) as a level characterized by high-quality member interaction, high motivation and participation, high reciprocal influence among members, effective communication, high performance goals, and a well developed leadership structure (pp. 16-17). Perceptual differences among faculty included beliefs about the decision process: Faculty at single campuses were more positive about their environment than those at multicampus districts and those from more traditional "academic" departments perceived lower quality decision processes than faculty from more applied disciplines (Hushaw 1977).

Shulman (1976) studied 18 academic departments in a state-supported Big Ten university and observed three major factors that seemed to be related to differences in organizational communication climates: (1) downward patterns, (2) familiarity, and (3) influence. Significant relations emerged between departmental communication climates and variables such as turnover, departmental loyalty, morale, performance goals, and communication satisfaction. A study of the relationship between leadership behavior of physical education department chairpersons and organizational communication climates concluded that although administrators agreed among themselves about role expectations and need dispositions, subordinates disagreed with these dimensions. Additionally, individuals developing person-oriented climates were more efficient and effective than those developing system-oriented climates (Hedrick 1976). Following his study of three types of colleges in four senior institutions, Area (1978) also suggested that deans and other college administrators could enhance the level of faculty satisfaction by developing and using an informal communication system and by decreasing rigidity in communication whenever possible.

Finally, one review of faculty and administrative perceptions of downward messages in a small, liberal arts college resulted in the discovery of

positive relationships between communication satisfaction and institutional satisfaction. The review also discovered no relationship between these items and dimensions such as years at the college, years in rank, general academic area, or accessibility of the dean. Age was significantly related to both satisfaction measures, with younger faculty members demonstrating more dissatisfaction (Ravage 1974).

To summarize, studies of the integration of faculty members into colleges and universities have suggested that important elements include the upward influence chairpersons are believed to have and the level of faculty involvement in policy formulation. Departmental communication climates had an important impact on issues such as turnover, performance goals, and communication satisfaction. Once again, person-oriented climates yielded more positive consequences than system-oriented climates.

Adaptability/dealing with innovation. Organizations are confronted with the ongoing problem of making adjustments to accommodate changes in the environment and in many elements within the system. As organizations with central goals related to expanding the frontiers of knowledge, colleges and universities would seem particulary susceptible to problems associated with adaptability and effective ways of dealing with innovation. Certainly, dimensions described earlier such as the degree of openness present in the communication system would appear to be related to the ability of a system to be responsive to innovation. However, colleges and universities sometimes fail to deal with innovation in effective ways.

One important factor related to an institution's ability to deal effectively with innovation is the establishment of necessary communication links within the organization. Oastler (1975) described the experiences of the City Colleges of Chicago in establishing a special "learning resources laboratory" known as "TV College." TV College used televised courses to serve the educational needs of special groups of students, including housewives and the handicapped. However, Oastler noted that the college campus had failed to take full advantage of the TV College program even though it was part of the same system, partly because effective links had not been developed between the TV College and the rest of the system. Additionally, he noted that policy making had been confined to central administrators of the TV College, thereby reducing the motivation of others involved in the project.

The importance of administrative support in developing a climate that views innovation positively was emphasized in a study exploring the use of EXPER SIM—a computer simulation used to teach research design and strategy in some 67 colleges and universities (Agarwala-Rogers and Rogers 1976). This notion was modified somewhat by an investigation of instructional development projects that noted that the presence of either innovation and aggressive teaching faculty or high-level academic officers had a greater impact on the development of new programs than did formally trained developers (Lawrason 1977). In another study, formal networks involving consultants or resources were found to be more effective than

administrative encouragement, informal communication networks, or personal satisfaction in predicting faculty use of instructional innovations (Kozma 1979).

Thus, a variety of factors in the organization's communication climate have been shown to have some relationship to the adoption and effective use of innovations. These factors include: administrative support, aggressive and innovative faculty, formal networks involving consultants or resources, and the establishment of appropriate communication links within the organization.

Decision Making, Management, and Communication

Background

At one level, the process of decision making involves selecting a preferred course of action from a range of alternative actions available. However, effective decision making involves more than simply selecting one "right" alternative while eliminating incorrect choices. Furthermore, since the decision-making process is a means to an end and administrative effectiveness will often be evaluated in terms of both the results obtained and the methods that produce the results, an administrator must be concerned with both the quality of the outcome and the quality of the process. Drucker has commented on the centrality of the decision-making function to managers: "Executives do many things in addition to making decisions. But only executives make decisions. The first managerial skill is, therefore, the making of effective decisions" (1974, p. 465).

The range of decisions processed in an academic institution varies from the trivial to the critical (from determining the brand of coffee to be used in a faculty lounge to developing a strategy for reducing faculty positions under retrenchment) and from the routine to the unknown (from determining a department's schedule of classes for a given semester to predicting the consequences of possible federal legislative action on a specific campus).

Decision making is ubiquitous in academia, confronting students, faculty, and administrators in steady doses. Three general types of decisions can be distinguished: (1) problem-solving decisions, involving attempts to correct specific difficulties; (2) opportunity decisions, involving attempts to select more advantageous courses of action; and (3) project management decisions, involving normal aspects of daily operations (Rausch 1980).

Decision making and communication are intimately related. Even in situations where decision making appears to be a unilateral phenomenon with a single individual and not a group selecting a course of action, the data-gathering stage of the process often involves interaction with others. At several specific points in the decision making process, the role of communication is particularly clear.

Value Clarification/Priority Setting/Goal Development

The process of developing a set of goals to be pursued serves as a prelude to effective decision making in an organization. At the institutional level in a college or university, goal setting may be accomplished through the development of a mission statement and supporting goals, by the adoption of a formal management system such as management by objective, or through a number of other approaches. At this level, goal ambiguity can present a serious problem. In fact, some have contended that the ability of a university president to generate significant accomplishments depends on whether the goal system remains highly ambiguous or becomes sufficiently operational (Cohen and March 1974). Others argue that this analysis merely explains why many colleges are experiencing difficulties and contend that more must be done to expand empirical research into power in academic institutions (Richman and Farmer 1976). Although the im-

portance of developing consensus on goals has long been recognized as contributing to effective problem solving (see, for example, Likert 1967), goal consensus is by no means universal in academic institutions. As Corson has noted,

> *For reasons that stem from the basic nature of an institution of higher learning, the college or university functions with only the most general understanding as to goals to guide the individuals who carry out its activities. In this respect the university differs significantly as an organization from its counterparts—the business enterprise or the military unit and some . . ., but not all, governmental agencies (1975, p. 77).*

In a study of goal consensus among community college personnel, greater consensus was observed on strategy statements than on goal statements. Additionally, the degree of consensus varied according to academic division with consensus occurring most frequently among faculty members in the divisions of business, life sciences, library services, physical sciences and technology, and social science. The greatest variance among respondents was in the humanities division (McHugh 1975).

An extensive analysis of the process of working toward goals, including attention to many of the related communication issues, has been provided by Rausch (1980).

Data Gathering

One advantage traditionally claimed in using small groups to solve problems is that the quality of decisions is improved because of the larger pool of available resources (experiences, judgment, etc.). The stage at which information related to a pending decision is gathered is critically important in determining the overall quality of the ultimate decision. Although a frequent complaint is that information is insufficient to make a quality decision, a surplus of information is an even greater problem. This surplus makes it necessary to develop a sorting strategy to determine the information that must be processed in detail and the information that may be discarded. Long before contemporary computer developments, Thayer commented on the problems of data management and the way that such problems can be exacerbated by developing technologies:

> *The present capability of data collection, processing, and preparation equipment and procedures is such as to veritably flood the administrator with current and comprehensive data about his organization and its environment. But the sheer increase in speed and extent of data integration across functional boundaries has not solved the basic questions of what? where? who? when? how? and how much? In fact, such problems have actually been intensified by data hardware and software technology (Thayer 1967, p. 79).*

The uncertainty that is characteristic of many situations in colleges and

universities also serves to intensify this problem. As Galbraith (1977) has noted, "the greater the task uncertainty, the greater the amount of information that must be processed among decision-makers during task execution in order to achieve a given level of performance" (p. 36).

Our ability to make effective use of management information has been enhanced through the development of organizations such as the College and University Systems Exchanges (CAUSE) and the National Center for Higher Education Management Systems (NCHEMS) (See Gamso and Service 1976). Other innovations at the institutional level have included the development of a management systems inventory (MSI) designed to present an improved mechanism for self-study and evaluation of institutional management (Parekh 1975) and an information-based curriculum development system (Martin and Grillo 1976). A diagnostic review and self-study process, originally intended for use in voluntary organizations, has also been suggested as a mechanism for gathering better data and employing the available data more effectively in higher education (Mink 1975).

A series of studies has been reported in the area of improved inter-university communication through the expanded use of computer networking (Zinn, Parnes, and Hench 1976; Interuniversity Communications Council [EDUCOM] Proceedings 1974, 1976; Emery 1978; Emery et al. 1976; Johnson et al. 1980). Recently, a call has been made for more anticipatory rather than reactive decision making in higher education, with the suggestion that an integrated institutional data base serve as a key element in the system (Mishra and Gannon 1980). However, individual and small-group decisions presently being made throughout the organization on a daily basis often employ far weaker supporting technologies. Conclusions drawn from simulation studies suggest that situations characterized by either high or low information loads produce adverse effects:

> *The relationship between information load and decision-making complexity is curvilinear, with informational and personality variables playing a role in specifying the details of the function. Decision-making under high load tends to become stereotyped, characterized by the reduction of information search, the selective use of information, and increasingly stimulus-bound reactions . . . (Suedfeld 1978, in King, Streufert, and Fiedler 1978, p. 209).*

Cohen and March comment on this problem and argue that choice processes in an academic institution may easily become overloaded and that the organizations where this happens typically have weak information bases (1974, p. 207). An Episodic Communication Channels Organization (ECCO) analysis (a technique for tracing message flow in an organization) examined communication patterns within a major university and confirmed this situation, concluding that the availability of a wide range of internal and external communication sources to faculty and staff makes it extremely difficult to employ a standard, formal, top-down pattern in

an analysis of this organization (Holsenbeck 1975). David H. Smith has also commented on the relatively weak information bases of colleges and universities, noting:

> *If administrators have little information about the outcomes of university activities, faculty members in turn have relatively little information on important factors external to their own activities and their own departments. They are typically ignorant of important policies of the state government, the system or the university of which they are a part. They are often surprised when they become aware of those policies and find an effective method of dealing with many of them is simply to remain uninformed (1979, p. 36).*

In summary, gathering data for effective decision making in colleges and universities often includes information overloads related to the uncertainty of the tasks. Computer information support has been more helpful at the institutional and interinstitutional levels, with the day-to-day decision-making processes of many colleges and universities characterized by weak information bases, a wide range of communication links, and very flexible boundaries. Additional investigations are needed of the mechanisms available for data gathering and information management for the many daily decisions made by small groups in academic settings.

Roles

Another important variable in the decision-making process involves the roles assumed by or ascribed to individuals involved in that process. Although the classical distinction between task, group-building and maintenance, and individual roles (Benne and Sheats 1948) remains the most common general approach to role analysis, the study of specific positions within a university has been a more frequent research strategy for examining roles and communication behavior of individuals in roles in academic institutions.

When Seehafer (1977) examined major communication topics for nearly 300 college and university presidents, he found that topics related to faculty and academic affairs consumed the greatest amount of the presidents' communication time. This topic area was followed by business/financial management communication, fund raising, business-related external society, and student communication, respectively. Slightly more time was devoted to communication inside the university than outside. Presidents of private institutions spent the greatest portion of their time on fund-raising topics, and presidents of public institutions spent the greatest portion on faculty and academic affairs. Others have explored the role of the community college president, with special emphasis on the leader behavior of these individuals (Stevens 1976).

Adams (1977) found considerable conflict about the role of the academic dean in areas of authority, role responsibilities, and delegation of responsibility. One study of the department chairmperson role (Warne-

munde 1976) commented on communication flow, noting that the primary flow was upward from faculty to department chairperson. Also, more successful chairpersons (as perceived by peers and superiors) more frequently confined their communication to university rather than personal matters and received more communication contacts than their less successful colleagues. Another study on chairpersons commented on the increasingly administrative nature of that position and on the tendency of chief academic and executive officers to attribute more power to the chairperson than is, in fact, present (Admire 1978).

A recent exploratory study surveyed nearly 400 faculty members at a large midwestern university in an attempt to clarify the common definitional elements in job performance feedback and dimensions of organizational communication. Three common clusters of variables emerged: (1) a set involving the general quality of the information in the environment; (2) a set related to the source of the information, with one subdimension related to upward communication with the department head and another related to horizontal communication with colleagues; and (3) a set related to affective reactions with colleagues or peer sociability. The investigators also noted that responses indicated some confusion about the role of the chairperson, suggesting that faculty sometimes perceived the chairperson as an authority figure and other times as a colleague (Hanser and Muchinsky 1980).

Another study involving the use of ECCO analysis confirmed differences in available information based on an individual's role in the organization, with higher-level administrators knowing more information and more accurate information than lower-level administrators. Those at higher levels relied more heavily on one-to-one contacts for their information and also relayed more information (Sanders 1976). Additional investigations have explored communication and leadership patterns among chief college student personnel officers (Ebbs 1973) and leadership/management styles of head staff members in college and university residence halls (Chambers 1976).

Paul and Schooler (1970) explored differences in criteria employed by junior- and senior-level faculty members in management and concluded that significant differences existed. Specifically, junior faculty members assigned a much higher priority to scholarly efforts than did their more senior colleagues.

Clarity of existing role structures also has been investigated. Ambiguity of existing roles was noted in the comprehensive communication audit of a midwestern university cited earlier, and the impact of these ambiguous role definitions on communication in the organization was described:

> *The overwhelming majority of persons receive less information about their jobs, roles, and reward systems than they want. The information that is sent usually arrives too late to be of much use. Lack of adequate information has contributed to another, perhaps more harmful, problem—a lack of clarity in roles. Most persons feel that they do not adequately*

understand exactly what their job entails—its duties, responsibilities, powers, relationship to other jobs and the university's goals at large. This lack of clarity contributes to the problems of overload ("I don't know what to send"), underload (Why don't they send me what I need?"), feedback and responsiveness ("I thought someone else was going to handle this"), and coordination ("I don't know what the other departments are doing") (Goldhaber and Rogers 1978, p. 74)

General descriptions of the roles of significant college administrators such as the president, the dean, and the department chairperson, have been suggested (see, for example, Millett 1978), but these theoretical descriptions must minimize the wide diversity of organizational structures found in specific institutions. As Kauffman noted in his description of the presidency:

In some cases the president is the executive officer of the governing board; in others, the president is a middle-level manager of a field office. In some cases the president selects the members of the institution's governing board; in others, the trustees do not even know the president and may not have set foot on his or her campus. I have seen institutions where the president was totally bound by a manual, contract or procedures for every possible action; and I have seen other institutions where there was not even a faculty handbook or a written governance description (1978, p. 60).

Coladarci (1980), in a discussion of the deanship, calls for new research methodologies and paradigms in studying administrative roles in higher education and concludes that new research strategy may be called for:

The overriding objective is to generate something we now seriously lack if an inductive strategy is to be nourished—a competent and growing basis for fruitful, inductive quests for commonalities and for working inductive hypotheses about relationships between and interactions among given role definitions, performances, personal attributes, institutional characteristics, etc. Over time, such studies, if they adequately inform each other, also will permit the development of a more useful taxonomy of variables, which can serve the dual purpose of advising new studies and inviting more similarity of attack among them (in Griffiths and McCarty 1980).

However, even as this improved research base is evolving, role definitions must be developed in context and must emerge as one characteristic that helps to define each college or university as a unique system. Many academic administrators might be reluctant to impose the kind of constraints that specific, detailed job descriptions could imply. However, if roles in an academic institution are permitted to exist near the "ambiguous" end of the "ambiguous—well-defined" continuum, the probability of an ineffective organization is increased. Divergent role definitions among organizational members promote communication difficulties, and,

unless a fair degree of consensus can be developed on relational issues, success in solving content issues will be impaired.

Patterns of Group Decision Making

A large number of early studies on small-group decision making involved the use of some variation of John Dewey's reflective thinking sequence. A comprehensive review of these studies may be found in Larson (1971). Although a comparison of the reflective thinking sequence with alternative standard agendas based on the work of Harris and Schwahn (1961) and Kepner and Tregoe (1965) suggests that these other patterns may be more effective than the reflective thinking sequence (Larson 1969), the notion that employing some sort of standard agenda facilitates the work of the decision-making group seems well established. Although a variety of problem-solving and decision-making sequences have been suggested by various authors, a common theme in most of them includes stages for: (1) concentrating on situation description and obtaining agreement on the nature of the status quo; (2) focusing on the goals of the group and attempting to obtain consensus on the set of goals relevant to the present situation; (3) considering alternative courses of action in the situation; and (4) selecting a preferred course of action. Research on problem-solving thinking patterns, common in the 1960s, continued to receive attention in the 1970s. However, most of these studies were concerned with groups that met only one time for a specific task-oriented purpose (Cragan and Wright 1980). The availability of research data on groups with a more sustained meeting schedule is more limited.

In the last few years several investigators have adopted a phasic or cyclical approach to small-group analysis and have explored the stages commonly exhibited by task-oriented groups. Fisher (1970) has described a series of four such stages. His model of decision emergence included: (1) orientation, characterized by clarification and agreement as a social climate is developed and tentative attitudes are expressed; (2) conflict, as attitudes are stated with more clarity and vigor; (3) emergence, as some ambiguity is used to mediate disputes and as favorable expressions increase; and (4) reinforcement, as members express positive attitudes about the decisions and attempt to reinforce their confidence in the decision that has been reached. Another four-stage model has suggested that task-oriented groups pass through stages of latency, adaptation, potency, and goal attainment (Mabry 1975, pp. 68–70). Others have explored interpersonal, confrontative, and substantive phases of conflict (Ellis and Fisher 1975). However, in spite of several studies that support the notion that decision-making groups progress through a regular sequence of behaviors, the concepts investigated have been defined consistently, and relationships between the findings of individual studies remain open to considerable speculation. Additionally, one very recent study (Poole 1981) has provided experimental evidence favoring a contingency-based, multiple-sequence model of group decision making instead of the earlier alternatives that had suggested a common set of phases experienced by all groups.

Clearly, more research is needed on this question. For now, the practitioner working with decision-making groups might anticipate that a group will progress through phases like those described in the studies cited above, though tempered by contingencies in the situation or task.

One of the more common mechanisms for academic decision making, the faculty committee, was examined in a large, state-supported university by Tucker (1973). He concluded that the communication patterns exhibited by these committees bore little resemblance to the institution's organizational chart or to what might be suggested by the institution's organizational hierarchy,

> *since committees freely communicate at all levels and across horizontal lines in an unrestricted fashion. . . . Committees do not operate with as high a degree of specialization as might be inferred from their formal description with the areas of real responsibility being controlled in large part by the judgments of the members themselves (p. 221).*

Tucker's suggestions include increasing organizational constraints and decentralizing the decisions that are currently assigned to these committees.

In a discussion of the use of faculty committees, Balderston described three major problems inherent in most faculty committee systems: (1) the amount of time faculty members spent in committee work, (2) the tendency to use committees, in many cases, when one responsible person could do as effective a job, and (3) amateurism and rapid turnover among committee members because of a rotational assignment scheme (1974). Others have contended that problems with faculty committees stem not so much from weaknesses in the way they employ problem-solving procedures, but from two structural problems: (1) the fact that many of these groups serve only as recommending bodies, untimately forwarding recommendations to groups structured according to parliamentary principles, and (2) a win-lose orientation employed by participants in many of these groups, with members assuming that any decision inevitably produces one group of victors and one group of the defeated. This practice often acts to inhibit significant changes. Others have argued that the ability to promote a win-win orientation is characteristic of managers, but not of leaders, and that leaders and managers differ in certain basic personality characteristics (see, for example, Zaleznik 1979). However, this assertion seems open to testing, and further research is clearly warranted. In our judgment, more creative approaches to decision making might be able to shift the focus of group members so that they seek alternatives that produce mutual benefits whenever possible. This shift might result in both effective management and good leadership.

An additional problem is sometimes created by the fact that even those who support specific decisions often have little real responsiblity for implementation (Likert and Likert 1976). One author has suggested that the number of formal decision-making groups and the increased concern for

proper procedures and due process warrant the creation of an office of university faculty parliamentarian in many institutions (Neher 1978).

In summary, although specific research on decision-making patterns in academia is sparse, investigations of the faculty committee system have suggested several problems of communication including: the limited resemblance between the organizational hierarchy and the actual functioning of university committees, the uses of committees in inappropriate situations, and the tendency of many committee members to employ a win-lose orientation.

Communication and Leadership in Groups

For many years the subject of leadership in groups has been a topic of research interest. Early investigators (see, for example, Stogdill 1948) attempted to identify personality traits associated with leadership. Many early studies in this area were relatively unsuccessful, producing only the most general descriptions of relationships between personality and leadership. More recently, Geier (1967) explored traits of communication associated with leadership emergence, noting that five traits—being uninformed, nonparticipation, extreme rigidity, authoritarian behavior, and offensive verbalization—seemed to prevent individuals from emerging as group leaders.

Other investigators (see, for example, White and Lippitt 1960) have studied the effects of various leadership styles, exploring differences between democratic, authoritarian, and laissez faire styles. Functional theories of leadership have concentrated on the specific behavioral functions that an individual performs in a group, and observation systems such as the one provided by Bales (1950) have been used to describe these characteristics. A number of studies in speech communication involving the examination of leadership in groups have been reviewed in Larson (1971) and Cragan and Wright (1980).

Early exponents of a situational approach to leadership suggested that leadership behavior was an emergent phenomenon resulting from specific characteristics of the situation (see, for example, Gouldner 1950). More recently, considerable interest has developed in exploring the impact of the situation through a contingency approach to leadership. Fiedler (1967) has suggested that the most appropriate leadership style in a given situation depends on three primary situational constraints: (1) the power inherent in the leader's position, (2) the nature or structure of the task being performed, and (3) the personal relationships of the leader with other group members. Fiedler suggests that in situations that are extremely favorable for the leader (having power, a clearly structured task, and good personal relations with other group members) or in situations that are extremely unfavorable for the leader, an authoritarian approach is most effective. In moderately favorable contexts for the leader, a democratic approach is more effective. Fiedler, Chemers and Mahar (1977) have also presented a self-teaching guide designed to help individuals learn how to be effective in applying a contingency style of leadership.

Participative Management

One organizational design strategy with strong communication overtones sometimes employed in recent years in colleges and universities is some variation of a "participative management" approach. Anthony provides a definition of participative management and contrasts this approach with strategies of autocrats, benevolent autocrats, consulters, and free-rein managers. He describes a situation involving participative management as including a genuine sharing of authority and decision-making power between managers and those being supervised. Additionally, he comments on the communicative implications of this approach:

> *Under this approach managers must be skilled in good interpersonal relations. They must be good communicators. They need to be managers of conflict so that disagreements are resolved and conflict is channeled into constructive endeavors. They must know how to bring out the best in their group, how to capitalize on each individual's strengths, and to overcome each person's weaknesses. They need to know how to compromise in such a manner that group and organizational expectations are satisfied (1978, p. 11).*

Some of the benefits normally attributed to participative managen.ent have clear communication implications. These benefits include greater ability to accept change, increased subordinate commitment to the organization, greater trust of management, less need for close supervision, improved decision quality, improved upward communication, and improved teamwork (Anthony 1978). The importance of effective communication and of careful information systems management within participative management have also been emphasized (Anthony 1978). According to one survey of subordinates conducted in a nonacademic setting,

> *participative management is most frequent when organizational policies are clear, the organizational climate is warm and trusting, the manager has long-term objectives, tasks are complex and subordinates have more information about decisions than does the manager. Effectiveness of work unit operations is enhanced by participative management when organizational policies are clear, tasks are complex, and subordinates have more discretionary opportunities on how to complete their jobs (Bass and Rosenstein 1978, in King, Struefert, and Fiedler 1978, p. 6).*

Certainly, a number of the characteristics cited in this survey seem applicable to colleges and universities.

Several parallels between participative management as described by Anthony and System 4 management described by Likert and Likert (1976) are apparent, and both argue specifically for the adoption of a highly participative model of academic governance. Anthony notes that a participative strategy wherein higher levels of managers view themselves as

facilitators of the work of professionals is a most appropriate approach to management in higher education. Similarly, Likert and Likert argue that System 4 management will result in a college or university with a much greater capacity of productive conflict resolution and decision making (1976).

In the comprehensive communication audit for a midwestern university cited earlier, the auditors described the existing communication system for participation in decision making which might well apply to other colleges and universities:

> *Participation in decision making is inadequate at most levels. Lower-level personnel, particularly faculty, feel that administrators are making all the decisions without adequate consultation. Some faculty feel that they are only "rubber stamps" whose input to decisions is more apparent than real. Chairpersons tend to feel that deans are not really open for input, and most deans feel that they collectively do not have sufficient formalized input to vice presidential decisions. Even some vice presidents feel the lack of sufficient input into the decision-making process (Goldhaber and Rogers 1978, pp. 73–74).*

When Hewin (1978) studied a statewide community college system, he found that faculty members perceived a wider gap in shared authority than did administrators and that faculty preferred more communication and consultation to new delegations of authority or new organizational structures as solutions to this problem.

In a laboratory experiment based on a participative model, Harr (1978) examined the effectiveness of a participative budgeting system. Within this setting a participative mode resulted in increased accuracy in perceiving the positions of others concerning resource allocation, increased congruity with superiors, and increased acceptance of the final budget decisions. Although generalizations from this kind of simulation need to be interpreted with some caution, the study does support the possibility of significant communication benefits from genuinely participative management styles.

Management By Objectives

Although management by objectives (MBO) approaches have been employed in industrial settings for many years, specific application of these techniques to colleges and universities is a more recent phenomenon. Books by Deegan and Fritz (1976), Harvey (1976), and others have provided many suggestions for employing an MBO-based approach in university management. Among the common benefits claimed for MBO is an enrichment of the communication climate within the organization. Some assert that communication in the organization will increase in frequency and improve in quality in both upward/downward and lateral contexts under MBO (Harvey 1976).

In a comprehensive review of some 34 colleges and universities im-

plementing either MBO or an MIS under a series of Resource Allocation and Management Program (RAMP) grants provided by the Exxon Educational Foundation, approximately half the institutions rated these programs a success (Baldridge and Tierney 1979). Another study exploring the success of MBO at eight community-junior colleges reported communication successes including conflict reduction between superiors and subordinates, expanded participation in decision making, and increased mutual understanding and consideration among colleagues and superiors and subordinates. However, the same study noted no clear improvement in organizational performance (Rossano 1975). A third study of administrators at 32 community colleges employing MBO concluded that formal contacts between superiors and subordinates had increased somewhat, suggestions from subordinates had increased and a higher percentage of these suggestions had been adopted, and feelings of responsibility were clarified as subordinates perceived a greater part in decision making (Carter 1979). However, Carter also noted some negative effects on communication across division lines within universities.

Certainly, many of the goals of an MBO system are related to improving the organizational communication climate and creating a richer context for communication. However, the variety of forms that MBO has taken in higher education makes these goals less than universal in situations where MBO systems are in place.

Decision Acceptance

One value traditionally claimed for small-group decision making involves the acceptance of decisions by group members and the commitment of these members to carry out decisions they have helped to form. A number of studies from nonuniversity settings have supported the idea that individuals who have participated in decision-making groups are more likely to accept the decisions reached and to assume responsibility for carrying them out. This assumption forms one of the underlying bases used to justify approaches such as participative management and MBO. Although explorations into the specific operation of this phenomenon in colleges and universitites are not available, some general observations can be suggested.

The existence of a large number of groups with decision-making responsibilities as well as the wide dispersal of power in many colleges and universities produce a complex pattern of responses to decisions, as each affected group interprets decisions from the perspective of its own assumptions, experiences, and values. Similarly, the perceived quality of opportunities for participation, the existence of appropriate feedback relationships for explaining decisions, and the methods used to implement decisions also influence decision acceptance. Additional factors that may inhibit decision acceptance in situations where a decision involves significant change include organizational inertia, traditional academic values that may oppose innovation, and threats to secured positions. At least one source has suggested that the kinds of communication networks pres-

ent in higher education often fail to produce commitments like those that occur in other organizations:

> *None of our large universities appears to have an interaction-influence network embracing all parts of the university through which efficient communication and problem-solving can occur. Moreover, once decisions are reached, the interaction-influence networks of these universities do not create the levels of motivation and felt responsibility among all, or virtually all, students, faculty, and administrators to assure that the decisions will be effectively implemented. The present interaction-influence networks of our large universities are as inadequate for creating widespread responsibility as they are in their communication and problem-solving capabilities (Likert and Likert 1976, pp. 43–44).*

Other Studies of Decision Making, Management, and Communication

Several authors have presented reviews of communication research into group decision making (Dickens and Heffernan 1949; Keltner 1960, 1961; Larson 1971; Cragan and Wright 1980). Another author conducting a more general review of research on group decision making has commented that

> *the bulk of the research on group decision making and implementation has focused on the information search, information evaluation, and decision-making steps in the process. Most of this research has used tasks in which the group has been required to reach descriptive judgments with criteria available, essentially a problem-solving context. In contrast, very little attention has been directed toward decision making in a relatively criteria-free context, which appears to be more typical of that facing many organizational decision makers. Also, virtually no attention has been given to three central phases in the decision process: the selection of alternatives to be considered, the implementation of the decision once reached, and the reaction of the group to feedback (Castore 1978, in King, Steufert, and Fiedler 1978, p. 273).*

Unfortunately, the research on decision making in colleges and universities has done little to clarify this picture, and Castore's call for additional research is just as appropriate in this setting. However, some additional factors related to communication and decision making in academic settings have received attention.

The concept of subunit power as an intervening variable in an organization was applied to the study of an institution's budgetary evolution over time. Subunit power was specifically defined as departmental influence as measured through ratings of department chairmen and membership on major university committees. The results supported the notion that "the more power a department has, the more its change in resources over time is independent of its change over time in work load or student demand" (Pfeffer and Salancik 1974, p. 148). The relationship between existing power in an organizational subsystem and organizational communication patterns involving that subsystem remains to be investigated.

One additional factor that has been the subject of an investigation in higher education is the impact of the sex of the administrator on the perceived quality of a decision. Although faculty members surveyed indicated that the sex of an administrator was a relatively unimportant factor when the administrator was selected for the position, decisions attributed to same-sex administrators received significantly higher faculty ratings than the same decision attributed to administrators of the opposite sex (Fluck 1975).

Other contributions related to decision making, management, and communication in academia have covered a wide variety of topics. Areas explored have included the importance of the effective use of communication by financial managers during an era of limited resource (Mann 1979); faculty motivation through application of behavioral theories (McIntyre 1977); and campus human resource development, as an element of total institutional development (Mensel 1977) through national networks for development (Smith 1977) or through contributions of those in speech communication (Justice 1976).

Collective Bargaining

Although faculty unionization and collective bargaining have become more frequent in higher education, specific explorations of the impact of collective bargaining on communication in higher education are not common. One reported study examined campaign techniques in faculty elections and suggested a model for a succesful unionization campaign (Stephens and Timm 1978). Other studies have explored cues given by those involved in collective bargaining situations through various messages available for examination (Thomas 1977); have examined the semantic reactions of faculty and administrators to the language of unions and management employed in collective bargaining situations (McCracken 1978); and have provided suggestions for implementation, including the suggestion that if implemented carefully, collective bargaining can serve as a mechanism for opening up new channels of communication (Schneider 1974).

In view of the potential impact of collective bargaining on organizational communication in colleges and universities, this area would seem most appropriate for expanded research. Obviously, one consequence of collective bargaining in colleges and universities deals with modifications in the communication environment. A collective bargaining agreement may define a number of areas as inappropriate for discussion until the next round of contract negotiations and may provide very specific procedures for communicating about other key organizational events. Explorations of the impact of collective bargaining on organizational decision making and on the organization's communication climate are particularly important areas deserving of further attention.

Training for Better Decision Making, Management, and Communication

A number of special programs have been developed to provide special training in more effective decision making, management, and communi-

cation. One specific example of this kind of program is the Management Development and Training Program for Colleges and Universities, a system developed by the Higher Education Management Institute (HEMI), under the sponsorship of the American Council on Education. Other programs such as the University of Texas System's Institute of Higher Education Management have placed special emphasis on selected components (in this case, academic planning). Still other examples of workshops and institutes directed toward special groups such as department chairpersons or toward special topics can be found in almost any issue of *The Chronicle of Higher Education*. Many of these programs include components related to providing training in more effective communication behaviors, but a comprehensive training program involving organizational communication training for practitioners in higher education is not available. (The HEMI program does include one instructional package on organizational communication.) Not too surprisingly, reports on the efficacy of current programs to promote better decision making, management, and communication have not appeared in the available literature.

Conclusions

Communication within administrative structures in colleges and universities is all too frequently an improvised matter. This review of organizational communication and higher education has provided some information about why this is true. In many areas, the scope of the problem of organizational communication in higher education remains largely undefined, and research is needed to clarify this scope. A typology matching communication conditions and appropriate behaviors in colleges and universities remains to be developed.

Problems of diffusion, distortion, and uncertainty all need further attention in colleges and universities. Many other types of organizations have long ago attempted to define which members of the organization need to know which information. However, in higher education this problem has often been addressed by assuming that everyone needs to know everything, and information has been disseminated as widely as possible. The most common way of evaluating the success of current dissemination systems appears to be to assume that if no one is complaining about the information received, then everything must be operating well. However, most individuals have developed at least one sorting strategy for dealing with information they believe is unnecessary. They are far more likely to discard the material than to call to complain about receiving it. The net effect of this dissemination system is to increase distribution costs by providing a large amount of material that is simply discarded and, in a time of increasing overload, to risk having valuable material treated as unimportant and be discarded with the rest. Significant additional research on dealing with information overload in the college and university setting needs to be developed. Administrators need to assess the information needs of their subordinates and the methods of diffusion employed, including a review of both the formal and informal networks.

Questions related to the organizational communication climate in colleges and universities may become a greater focus for research in the next several years. The system is, after all, a human system, and human responses to the organizational communication climate deserve additional attention. The information on organizational communication climate and performance outcomes would appear to be a particularly valuable area for research. In an earlier time, faculty members and others working in colleges and universitites were willing to accept salaries lower than those in the business and professional world partly because of the climate available in these institutions, the "quality of life." More recently, in an era of dramatic growth and sharp increases in demands for accountability, bureaucratic structures and demands for objective indictors of achievement as a prerequisite for rewards have become more common. An attempt has been made in many settings to replace what was basically an intrinsic rewards structure with an extrinsic structure. Now, as resources diminish, competition for tax dollars becomes more acute, and extrinsic rewards in general become harder to attain, attention may have to be focused on the organizational communication climate and the "quality of life" in colleges and universities.

Improved organizational structures, such as project management and matrix systems, certainly merit further study to explore their communicative impacts on colleges and universities. Methods for improving the information environment for the many small decision-making groups operating throughout most colleges and universities deserve attention, and approaches to minimizing win-lose orientations in faculty committees and other groups representing a wide variety of interests should also be made. Clear definitions of the roles of key individuals in the system should be provided to minimize the ambiguities often found in colleges and universities. The relationship between collective bargaining and the organizational communication climate is one particular area where additional research is needed.

Organizational communication and higher education include many areas where topics of common research interest are available, and a great deal of additional research in these areas needs to be undertaken. The development of a typology of communication conditions and behaviors for the purpose of increasing the available repertoire of communication responses for administrators in higher education could be an extremely valuable contribution, with many long-range benefits for both organizational communication and higher education.

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